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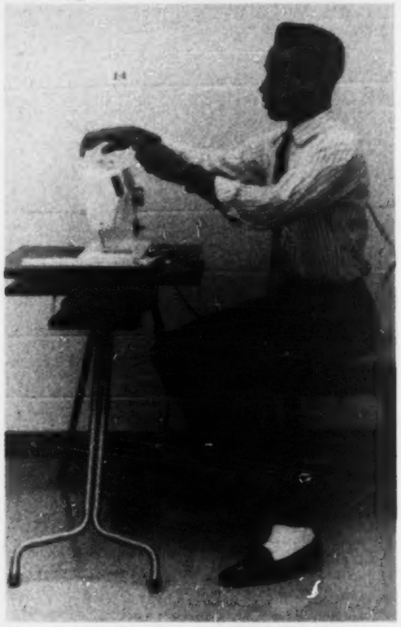
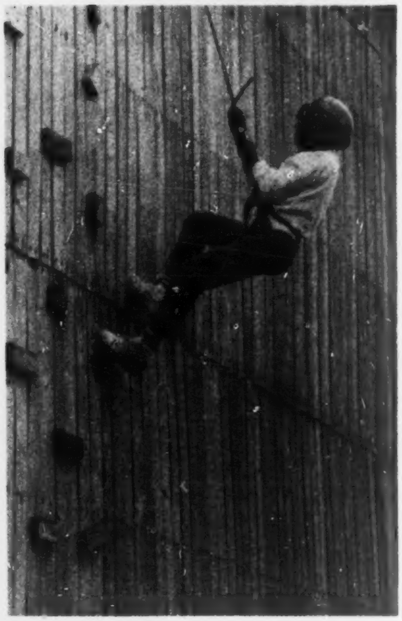
Plus a Special Section on
Middle Schools
Jomills Henry Braddock II
And Joyce L. Epstein
Guest Editors





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THE EDITOR'S PAGE

Let's Not Lose Our Balance

THIS NATION wants – and rightly so – its young people to master the content and skills that will enable them to lead America effectively into the 21st century. The signs are everywhere.

At its summer meeting, for example, the National Governors' Association (NGA) established a task force to determine which essential skills the schools should be teaching. Meanwhile, the math, science, English, and social studies specialists have turned out their own separate reports on curricular reform in recent months. The Council of Chief State School Officers (CCSSO) is trying to come up with better indicators of academic achievement, and the National Assessment of Educational Progress has been asked to set appropriate achievement goals for the subjects and grade levels it tests.

The education summit in late September added fuel to the fire. That meeting yielded an agreement to establish national goals in seven areas – one of which is the improvement of American students' performance on international assessments. In a follow-up meeting to the summit, a CCSSO task force unanimously approved (and delivered to President Bush and the NGA) six recommended goals for U.S. education – three of which deal with curricular content or with student achievement in specific disciplines.

Clearly, the national focus right now is on achieving better academic performance in the content areas. That's a laudable goal, as long as we also develop means of assessing the complex cognitive skills that we want young Americans to master.

Given the national bent, we were not surprised to discover, as this issue of the *Kappan* was in production, that the Johns Hopkins University Center for Research on Elementary and Middle Schools (which houses the researchers who prepared this month's incisive review of the state of education in the middle grades) seemed likely to lose its federal funding. The U.S. Education Department's Office of Educational Research and Improvement (OERI) had proposed eliminating school levels as a specific area of research. Instead, OERI recommended new centers that focus on – you guessed it – specific content areas.

Even a cursory reading of this month's special section on education in the middle grades will convince readers of the shortsightedness of this approach. Centers devoted to research on the content areas are important. But so are centers devoted to such discipline-spanning issues as tracking and grouping arrangements, staffing practices, the preparation of teachers for dealing with specific age groups, and effective ways of making education responsive to children's developmental needs. We need balance: information both on how to teach subject matter and on how to teach *children*. And the special section in this issue of the *Kappan* makes one thing very clear: there are plenty of unanswered questions regarding how best to handle the education of young adolescents.

Indeed, of the eight essential principles for transforming the education of young adolescents that were proposed by the Carnegie Task Force on Education of Young Adolescents in its June 1989 report, *Turning Points: Preparing American Youth for the 21st Century*, only *one* focuses on subject matter per se: that middle-grade schools transmit a core of common knowledge to all students. Although the task force devotes considerable attention to this principle, the other seven all deal with issues that cut across subject-matter boundaries.

One of the major federal roles in education is to support and foster the research on which effective practice depends. By the time you read this *Kappan*, a final decision on the missions of research centers will have been made. We hope that OERI arrived at the right one. – PBG

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What Matters in the Middle Grades — Grade Span Or Practices?

The hard work of developing excellent middle-grade programs is not accomplished merely by changing grade spans or constructing smaller buildings, Ms. Epstein reminds us. Instead, we must attend to practices that are responsive to the needs of early adolescents.

BY JOYCE L. EPSTEIN

OF ALL the questions raised about middle-grade education, the most frequent is, What is the best grade span for a middle-grade school? The answer to this question is important to educators as they plan new school buildings, attendance patterns, and program reforms. It is the first question raised by parents, who wonder how their children will be affected by new ways of organizing grades, such as moving fifth- or sixth-graders from an elementary school to a middle school. Parents worry that their youngsters will be forced to grow up too fast or will be exposed to temptations and troubles that are beyond their abilities to cope.

It is not surprising that the question of which grade levels will be designated as "middle" is a major concern. The transition to the middle grades seems ominous: children will have to adjust to a new school and new friends, to many new teachers, and to a large building that is sometimes far from home. Most students make the transition to early adolescence and to middle-grade schools successfully, just as most youngsters successfully negotiate other changes and transitions in their lives.[1] Nevertheless, transitions and changes are filled with risks as well as opportunities. It is wise to consider which of several ways of organizing grades would be most likely to give students "better" or "more responsive" programs.

Education in the Middle Grades: A National Survey of Practices and Trends, conducted by the Johns Hopkins University Center for Research on Elementary and Middle Schools, gathered data on organizational variations among schools that contain grade 7 in order to study how grade span affects school programs, teaching practices, and the successes or problems of students. This article reports selected results on how the range of grade levels is connected to school size and to grade-level enrollment, school goals, report card entries, and trends in middle-grade practices.[2]

GRADE SPAN

In the national survey we found that schools in the U.S. that enroll seventh-grade students include about 30 different grade spans. We grouped these variations into six categories for our analyses:

Elementary/middle: primarily K-8 schools, but also Pre-K/7, Pre-K/8, K-7, K-9, 1-7, 1-8, 2-8, 3-7, 3-8, 3-9, 4-7, 4-8, and 4-9.

Elementary/middle/high: mainly K-12 schools, but also Pre-K/12 and 4-12.

Middle: mainly 6-8 schools, but also 5-8, 5-7, and 6-7.

7-8: mainly 7-8 schools, but also 7 only.

Junior high: mainly 7-9 schools, but also 6-9 and 5-9.

Middle/high: mainly 7-12 schools, but also 6-12 and 5-12.

The six categories represent different "starting" grades (elementary or middle) and different "ending" grades (middle or high school). Three categories of *combination schools* include two or more different levels of schooling in the same building. Two of these begin with the elementary grades and continue either through the middle grades (K-8) or through high school (K-12). One combination starts in the middle grades and continues through high school (7-12). Three categories of schools dedicated to early adolescents start in the middle grades: middle schools (typically 6-8), 7-8 schools, and junior high schools (typically 7-9). In this article, references to what is listed above as a category's main grade span (i.e., K-8, K-12, 6-8, 7-9, and so on) are shorthand for its full range of grade spans.

The number of schools with particular grade spans does not necessarily tell us anything about the number of students who attend schools with particular grade spans. There are, for example, many K-8 and K-12 school buildings, but most of them are small and enroll relatively few students. Table 1 shows the national percentages of school buildings and of seventh-grade students represented by each of the six grade spans.

Nationally, about 25% of all school

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TABLE 1.

National Patterns of School Types and Enrollment of Seventh-Graders

Grade Span	Schools %	Seventh Graders %
Elementary/middle combination (K-8)	32.1	9.3
Elementary/middle/high combination (K-12)	10.5	2.4
Middle school (6-8)	25.3	39.3
7-8 school	11.0	24.6
Junior high (7-9)	8.4	17.4
Middle/high combination (7-12)	12.7	7.0

buildings are middle schools (mainly 6-8), and about 40% of all students in the seventh grade attend middle schools. If we consider all three categories of schools dedicated to early adolescents – middle, 7-8, and junior high schools – we see that they account for about 45% of all school buildings. These schools enroll about 80% of all seventh-graders. By contrast, about 32% of the public school buildings that contain grade 7 are elementary/middle (K-8) combinations, but these schools are attended by only 9% of all seventh-graders.

The types of schools and the patterns of attendance vary by region. In the West, for example, just over half (51%) of the schools are K-8 (elementary/middle combination) schools. But these schools enroll only 8% of the seventh-grade students in that region. Just about one-third (33%) of the seventh-graders in the West attend middle schools, which account for18% of the school buildings in that region.

SIZE AND GRADE SPAN

Another issue related to the organization of middle-grade schools is that of size. Parents and educators wonder, "How big should a middle-grade school be?" or, more specifically, "Should our community spend money on a new high school and put our middle-grade students into the old, large high school building, or should we build a smaller middle school and simply renovate the present high school?" These and other practical questions are being debated in many communities.

Several recommendations in the recent reports of various task forces concern school size, but none of the reports suggest that large schools should be demolished.[3] Instead, the preferred approach is to create small "communities for learning," even in large schools. The goal for large and small schools alike is to create responsive environments that provide students with care and support, as well as challenging programs that will increase their learning.

In our sample of schools that contain grade 7, enrollments range from five students to more than 2,250. Within any one category of school, the range is also great. For example, middle schools (6-8) range in size from 100 to 2,250 students. Moreover, school size has important implications for enrollment by grade level.

As shown in Table 2, combination schools (K-12, K-8, 7-12), which have many grade levels, tend to be smaller in size – averaging between 300 and 400

TABLE 2.

Grade Span, Size of School, and Enrollment per Grade Level

Grade Span	Average School Enrollment	Average Grade-Level Enrollment
K-12	319	25
K-8	340	42
7-12	377	62
7-8	491	249
6-8	557	180
7-9	733	241

A Day in the Life of an Exemplary Middle School

Vladimir Bekesh

Vladimir Bekesh

Above, Stephen Keith, the principal of Westlane, enjoys one of many daily one-to-one interactions with a student. Below, students proudly display their hard-earned "gold cards," which entitle them to special privileges. The cards are awarded for good grades in conduct.

students – and tend to have very small enrollments at each grade level. Schools dedicated to early adolescents include from one to four grades. Middle schools tend to be middle-sized, averaging 557 students, with about 180 students in each grade. Junior high schools (7-9) tend to be larger than most middle schools, averaging 733 students per school, with about 240 students per grade level. Most 7-8 schools are smaller than junior high schools, with an average of 491 students, but the two types of schools have similar enrollments in each grade.

Grade-level enrollment, even more than school size, affects how students are grouped for instruction. For example, because K-12 schools have an average of only 25 students per grade level, classes in these schools are necessarily heterogeneous, and grouping, if it occurs, is usually within-class. As enrollments increase, schools have more options for their decisions about homogeneous and heterogeneous grouping within grade levels. Of course, even small schools could group students *across* grade levels, but few schools at this time use cross-grade grouping as a standard policy.

If the enrollment in each grade level remains small or if students are assigned to other small subgroups (as in arrangements that create "houses," "teams," "clusters," or "schools-within-a-school"), then the size of the school building should have little impact on the quality of the instructional programs or on the success of the middle-grade students. However, most schools currently do not use houses, teams, clusters, or schools-within-schools. Size may be a problem, then, in a significant number of middle schools until responsive programs and practices are implemented so that students do not feel lost, ignored, or anonymous.

SCHOOL GOALS AND GRADE SPAN

Most schools cannot easily change their size or their grade span, but certain practices can be altered or adapted. In our national survey, principals were given a list of seven goals pertaining to academic, personal, and social skills and were asked to rank them according to their importance for *all* students. Regardless of the grade span of their schools, principals rated basic skills (including mastery of subject matter) as the most important goal and citizenship (including school and community service) as the least important goal.

The ranking of other goals, however, was influenced by the grade span of the school. Principals in schools dedicated to early adolescents – middle schools, 7-8, and junior high schools – ranked the seven goals in the following order:

1. basic skills (reading, math, writing, speaking, and subject-matter mastery);
2. personal growth and development (self-esteem, self-knowledge);
3. work habits (self-discipline, autonomy, and self-direction);
4. attitudes and commitment (positive attitudes about school, participation in class, school activities);
5. human relations (getting along with others, good race relations, multicultural education);
6. higher-level skills (reasoning, problem solving, critical and creative thinking); and
7. citizenship (including service to the school and community).

Principals of K-8 schools assigned less importance to the goal of personal growth and development. Principals of K-12 schools differed from all others by assigning more importance to higher-level skills. Principals of middle/high combination schools (7-12) assigned less importance to higher-level skills and to human relations.

It is risky to interpret rankings as clear indicators of what is or is not important to a principal or to a school. It may be, for example, that principals believe that all the listed goals are important and that the differences between the first- and seventh-ranked choices are not very great. It is possible, too, that the top rankings reflect the emphasis of a school's present program, not necessarily what a school would like to do. We know, for example, that all schools teach basic skills, but few have the necessary materials or trained personnel to offer strong programs in higher-level thinking or multicultural education.

The rankings may also indicate that – despite the wording of the survey question – schools regard some goals as applicable only to some students. For example, rightly or wrongly, problem solving and creative and critical thinking skills may be ranked relatively low because schools expect only some students to attain these goals. Similarly, service to school and community may be ranked low because only some students have the opportunity to participate in such activities or because that emphasis is only a small part of a school's program.

However, consistent patterns of rankings are significant. It is meaningful that schools of all grade spans set achievement in the basic skills (including subject-matter mastery) as the foremost goal for all students. It is notable that schools devoted to early adolescents rank personal growth and the development of self-esteem and self-knowledge as a higher priority than do other schools. Principals in these schools may be more aware of recommendations that programs for early adolescents should stress the development of positive self-esteem. They may also be working to balance the subject-centered and student-centered components of their programs.

The goals that schools set for students may affect course offerings, instructional programs, relationships between students and staff, and other practices. Our early analyses show, for example, that, regardless of the grade spans of their schools, principals who assign greater importance to higher-level skills report more use of active-learning approaches to instruction, which are believed to help students improve their critical and creative thinking.

There may also be connections between a school's goals and whether and how it provides special services to students. For example, other analyses show that schools dedicated to early adolescents, which rank personal growth and development higher than do other schools, more often assign students who need remedial instruction to an extra class period that meets while other students are assigned to electives. This is a relatively unobtrusive way to offer extra help to early adolescents, and it reduces the stigma often associated with the "pull-out" approach to remediation.[4] Schools' goals do not depend entirely on grade span, however; within any one organizational framework there is considerable variation in priorities.

REPORT CARD EVALUATIONS AND GRADE SPAN

Most schools do not present students with a formal list of goals, but all schools let students know what is important by what is monitored, rewarded, and evaluated. Our survey asked principals to indicate the types of marks and evaluations their schools include on report cards for middle-grade students.

Nearly all schools (99%) give middle-grade students letter or number grades for academic performance in each subject. Performance grades provide a means for schools to monitor and evaluate the attainment of their foremost goal – basic skills. While performance grades are standard, grades for progress and effort are rare. Only about one-fourth (26%) of the schools that contain grade 7 give separate grades for effort in each subject. Still fewer schools (18%) recognize student improvement with grades for progress in each subject.

About half of the schools give students grades for conduct or written comments in each subject. Computer-generated comments are used by about 30% of the schools. Good grades in conduct and positive comments may motivate students to work harder by letting them know that teachers are paying attention to them and recognizing their progress. Poor grades in conduct and negative comments may not be very motivating for students, but they may help teachers explain poor performance and establish standards for better behavior and schoolwork in the next grading period.

There is a definite relationship between a school's grade span and the type of report card entries that it uses.

- Middle schools (6-8) and 7-8 schools give the greatest number of different types of information on their report cards (an average of 3.2 different entries), whereas middle/high combination schools (7-12) give the fewest (an average of 2.4 different entries). The most common entries are grades for performance, grades for conduct, and written or computer-generated comments.
- K-8 schools are most likely to provide students with hand-written comments. Larger junior high schools (7-9) are most likely to provide students with computer-generated comments on their report cards.
- Grades for effort are most common in schools that end with middle grades – particularly elementary/middle (K-8) schools and middle schools (6-8) – and least common in schools that contain high school grades (particularly 7-9 and 7-12).
- A fairly large proportion of K-12 schools (34%) award grades for progress. This may be explained in part by the relative ease of monitoring the progress of the small number of students at each grade level. Junior high schools (7-9) give grades for progress significantly less frequently than do schools serving other grade spans.

Some principals noted that they use additional kinds of grades and messages on their report cards for middle-grade students. These include reports on attendance, absence, and tardiness by subject; ratings of students' social development, work habits, and citizenship; indicators of the students' reading levels or levels of learning; and requests for parent conferences. The development of citizenship may be higher on the list of goals in schools that give students grades in that area, but too few principals listed citizenship as a report card entry for analyses to be meaningful. One school uses progress reports that are written by the students and teachers together. Another adds hand-written comments to clarify computer-generated checklists.

As students enter the middle grades, their report card grades tend to go down, even as their overall competencies and knowledge go up.[5] Many students who received top grades in elementary school receive just average grades when they are compared to new populations of students from other elementary schools. Students who were average elementary students may be rated below average in the middle grades. The changing pattern of students' grades makes clear the need for middle-grade schools to use many different kinds of evaluation to motivate students. For those who are trying hard but cannot achieve top grades (or sometimes even passing grades) when performance is judged only in relative terms, effort and progress grades could provide important official recognition of good work. Effort and progress grades or teachers' personal comments may encourage students to work harder and to maintain or enhance their self-concept as learners, even if they cannot be the best students in the class.

Other analyses of these data show that, regardless of their schools' grade spans, principals rate their programs for early adolescents as stronger overall if the schools use progress and effort grades on their report cards. Progress grades and hand-written comments are also associated with principals' expectations for lower dropout rates (particularly among males) before high school. Indeed, these more responsive report card entries may be especially important for boys, who tend, on the average, to get lower grades than girls and so may need motivators other than traditional grades to help keep them in school.[6]

Virtually every middle-grade school in the country uses report cards, but rela-

A Day in the Life of an Exemplary Middle School

Vladimir Bekresh

Victoria Voelker

Above, sixth-grade students prepare to leave their assigned cafeteria table. A "table captain" helps to organize other students and, with a teacher supervisor, checks the table after meals. Below, a seventh-grader adopts a reflective pose in a mid-afternoon math class.

tively few have designed the form and content of the cards to be responsive to the needs of early adolescents for strong support and for recognition of their effort and progress in learning.

GRADE SPAN AND TRENDS IN MIDDLE-GRADE PRACTICES

Educators and leaders of the "middle school movement" have made many thoughtful suggestions regarding practices for middle-grade education.[7] Although educators are increasingly aware of the recommendations that have been made regarding the organization and instructional approaches for the middle grades, we do not have a clear idea of the prevalence or persistence of specific practices in middle-grade schools today. Our survey was designed to obtain this information, but we also wanted to know whether principals plan to adopt any recommended practices in their schools in the future and whether there are recommendations that they reject.

Approximately one-fourth of the principals provided usable information on whether, in the next three years, they plan to adopt any of 22 often-recommended practices for the middle grades. Although our data are admittedly limited, the principals who provided clear information on trends were likely to be those who knew their schools' histories and had plans for the future. There is a definite link between a school's grade span and the principal's expected adoption or rejection of these practices, as shown in the following examples.

Scheduling. Principals of schools dedicated to early adolescents predict that they will increasingly adopt flexible scheduling. This system permits class periods to differ from day to day in order to accommodate students' needs and varying instructional activities. Approximately 15% of schools dedicated to early adolescents now use some kind of flexible scheduling; that number could increase to approximately 35% in the next three years. Flexible scheduling is currently most common in K-8 schools, where teachers may have more control over the way they schedule time in self-contained classrooms or where they may be able to revise schedules in cooperation with one or two other teachers.

Another trend in scheduling practices is the use of an eight-period day. Principals in schools dedicated to early adolescents are more likely than principals in combination schools to consider implementing this practice. In the next three years the number of these schools that use the eight-period day may increase from about 30% to over 40%.

Curriculum and instruction. The number of middle/high combination schools using exploratory courses and minicourses will increase from about 35% at present to about 80% in three years. The number of schools dedicated to early adolescents that offer these courses will increase from about 45% at present to about 65%.

In 7-8 schools and middle/high combination schools (7-12), more principals are planning to add independent projects in all subjects to their students' programs.

The number of schools for early adolescents that incorporate cooperative learning in their programs will almost double over the next three years, from about 30% to over 50%.

More responsive practices. All types of middle-grade schools except K-8 schools expect to increase their use of interdisciplinary teams of teachers over the next three years. In middle schools (6-8), about 70% of the principals expect this to be part of their program within that period (in contrast to fewer than 20% of K-8 principals). Principals of junior high schools (7-9) project the greatest increase in the use of interdisciplinary teams, with more than 25% of the respondents in this category reporting plans to add teams of teachers to their program. At the same time, about 20% of the junior high school principals expect to decrease the use of departments with separate chairpersons in the next three years.

Three years from now, common planning periods for interdisciplinary teams may be in effect in 60% of middle schools (6-8) and 7-8 schools. The number of other middle-grade schools that provide common planning periods will increase from about 10% to 40%.

Principals in schools dedicated to early adolescents anticipate dramatic increases (from 20% to close to 40%) in the practice of assigning students to the same homeroom or advisory teacher for all the years in the middle grades.

Over the next three years five types of school practices to involve parents in their children's education will increase considerably in all categories of middle-grade schools except K-8 and K-12. However, some principals of schools of all grade spans are reluctant to encourage parent involvement in the middle grades. More than 50% of the principals report that they do *not* plan to add parent volunteers to their programs. This may be because of the difficulty of recruiting and training volunteers when many parents work or because some middle-grade teachers do not want parents in their classrooms. By contrast, few principals in schools of any grade span will oppose parent/teacher conferences. Parent/teacher organizations, workshops to inform parents about school programs and about early adolescents, and teachers' efforts to involve parents in learning activities at home are accepted by some principals (particularly in 6-8, 7-8, and 7-9 schools) and rejected by others.

Principals of K-8 and K-12 schools may emphasize parent involvement in the early grades, and principals may not be as sensitive to parents' needs for information about and involvement with early adolescents.[8] Overall, principals' plans for parent involvement over the next three years vary within and between different types of middle-grade schools.

In addition to reporting practices that they think they *will* use in the next three years, the principals indicated which of the 22 practices they *will not* use in that time span. Although middle school (6-8) principals are less likely than others to reject certain practices, even most of them (over 50%) report having no use for the practices of assigning students to the same homeroom teacher for more than one year, of grouping students across grade levels for instruction, of organizing an eight-period day, or of establishing schools-within-a-school that have separate administrative staffs. Over the next three years, large numbers of principals in all types of middle-grade schools are likely to continue to reject the use of these practices.

The principals' plans to use or reject recommended practices vary by grade span. Overall, principals of K-8 schools are the least likely to use or plan to use many practices that are commonly recommended for middle school education. Thus interdisciplinary teams, common planning time, exploratory courses or minicourses, and other middle-grade practices are not prominent in current or planned programs for early adolescents who attend K-8 schools. Principals of K-8 schools are less likely than principals of other middle-grade schools to endorse staff development in early adolescence and in specific teaching strategies for the middle grades, to arrange extracurricular activities or activity periods for all students, or to consider the use of an eight-period day. Fewer than 20% of K-8 principals predict that they will adopt these practices over the next three years, while between 34% and 88% of principals in other middle-grade schools predict that they will do so. The small grade-level enrollments of K-8 and K-12 schools may make it impractical to implement some middle-grade practices in the same way as do larger 6-8, 7-8, or 7-9 schools.

K-8 schools may purposely reject middle-grade practices in order to maintain an elementary school environment or to concentrate on basic skills instruction for all students. However, K-8 schools may in some ways be unresponsive to the changing needs of their students as they enter early adolescence. Whatever the reason, the data from principals suggest that for middle-grade students, K-8 and K-12 schools currently offer – and plan to continue offering – very different programs from schools dedicated to early adolescents.

More than 70% of the principals surveyed indicated that they are likely to add to their school programs in the next three years at least one of the 22 practices that they were not currently using. Moreover, approximately one-third of the principals reported that they had tried and dropped some of the recommended practices during the preceding three years. Clearly, developing an effective middle-grade program is a fluid process.

Summary of trends. What are the "signature" practices for middle-grade education? Which practices lie at the heart of middle-grade programs and sustain their development? There are two patterns in the data on expected trends that provide some clues to the answers.

An overall increase of 10% or more is anticipated in the frequency of use of the following practices over the next three years:

- interdisciplinary teams of teachers;
- common planning time for teams of teachers;
- flexible scheduling;
- students assigned to the same homeroom or advisory teacher for all years spent in the middle grades;
- cooperative learning as an instructional approach;
- exploratory courses and minicourses;
- parent involvement in workshops on early adolescence; and
- parents as volunteers in the middle grades.

These items may be viewed as "key practices" in the middle grades, in that over the next three years they are more likely to be adopted in more schools than other practices. Yet even these popular practices will be not be adopted at the same rate by all types of middle-grade schools. Principals in schools dedicated to early adolescents are more likely to add these (and other) practices to their programs. Schools that contain elementary grades (K-8, K-12) are less likely to add new organizational forms for middle-grade students than are schools dedicated to early adolescents.

We also asked principals to assess the quality of their present programs, and their replies give us another indication of how middle-grade practices will change over the next three years. Principals evaluated how well their present practices match their ideal by rating their programs on a four-point scale from weak to excellent. Overall, principals in suburban and urban middle schools (6-8) rated their programs higher than did principals in other schools. Principals of junior high (7-9) and middle/high combination (7-12) schools rated their programs lower overall in quality than did principals of other schools. Junior high schools in urban and rural areas, middle/high combination schools in suburban and rural areas, and 7-8 schools in rural areas suffer by comparison to middle-grade schools of other types and in other locations.

Although it is natural to praise schools that are "excellent or exemplary," principals who rate their schools as "fair" and describe their program as "developing and changing" may be improving their schools in exciting ways. Nevertheless, the principals' ratings can help us identify which practices principals see as related to stronger programs.

Seven of the 22 commonly discussed practices were significant predictors of positive ratings of middle-grade programs. The single strongest predictor of higher ratings of the quality of school programs overall is the use of common planning periods for members of interdisciplinary teams. Other significant predictors of high ratings are flexible schedules, common planning periods for departments, eight-period days, extracurricular activities or activity periods for all students, and cooperative learning strategies that include group rewards for mastery of academic skills.

The features that contribute to higher ratings of program quality involve large investments on the part of the schools. Such practices alter the way teachers work together, the time allotted for student learning, the way students work together, and the balance between nonacademic activities and academic coursework. Principals rate their programs higher if they have already made these relatively difficult changes in scheduling, instruction, and responsiveness to the diverse skills, talents, and needs of students.

A Day in the Life of an Exemplary Middle School

Victoria Voelker

An assistant principal, Ron Davis, discusses the day's events with a student.

HOW MUCH IS GRADE SPAN THE ISSUE?

Which grade span is best for educating early adolescents? Is grade span the most important issue for middle-grade reform, or is it a distraction from more important and more difficult issues? With the information available at this time, no one can say unequivocally that one particular grade span or program is "best" for all middle-grade schools in the U.S. Our survey reveals a number of complexities underlying middle-grade education and reform.

1. *Most schools that contain grade 7 have not yet developed educational pro-*

Educators in middle-grade schools need to take a hard look at the goals they now see as low priorities.

grams based on recommended practices for the middle grades. Although principals expect to increase their use of some of these practices over the next three years, most schools have a long way to go before they can be said to be genuinely responsive to the characteristics of early adolescents.

If school goals represent the "outcomes" that schools want for their students, then educators in all categories of middle-grade schools need to take a hard look at the goals they now see as low priorities. Many of these "low-priority" goals are believed to be important for early adolescent development – such as higher-level thinking skills, positive human relations and multicultural education, and citizenship and community service.

2. *Some practices are more prominent in certain types of middle-grade schools than in others.* Schools with different grade spans offer different programs, set different goals, evaluate students according to different criteria, and plan different programs for the future. In some ways, then, the type of school makes a real difference in the education of early adolescents.

Overall, middle schools (6-8) and 7-8 schools use more of the practices that are recommended for responsive middle-grade education than do other schools.[9] Principals in these schools, particularly those in suburban and urban settings, give their programs higher ratings overall. By contrast, junior high schools (7-9) and middle/high combination schools (7-12) use fewer responsive practices than do other types of schools. Principals in these schools give lower ratings to the overall quality of their programs for early adolescents. For example, middle/high (7-12) schools offer fewer opportunities for remedial instruction and fewer activities to ease transitions to the middle grades than do other types of middle-grade schools.[10] Junior high (7-9) schools are less likely than other middle-grade schools to use advisory group periods and responsive report card procedures. K-8, K-12, and junior high (7-9) schools are weaker than middle schools (6-8), 7-8 schools, and 7-12 schools in their organization of and commitment to interdisciplinary teams. K-8 schools place a stronger emphasis on drill and practice than other middle-grade schools. And there are clear differences in course offerings and instructional approaches in the different types of middle-grade schools.

3. *Regardless of grade span, good practices make stronger programs.* Practices vary within categories of schools, and some schools of different types implement similar programs. Regardless of grade span, principals rate their programs higher overall and expect students to have fewer problems when their schools emphasize practices that support the social, personal, and academic development of early adolescents. In some ways, then, grade span doesn't make a difference in the education of early adolescents. Rather, what happens in a school or classroom is more important than the name on the school door or the size and shape of the building. The hard work of developing excellent programs is not accomplished merely by changing grade spans or constructing smaller buildings, but by attending to practices that are responsive to the needs of early adolescents.

4. *There is much more to be learned.* In order to provide useful information to educators who must make tough decisions about middle-grade practices for the early adolescents who attend their schools, we need new data on how students' learning, attitudes, and behaviors are influenced by different middle-grade practices in schools of different grade spans. The upcoming National Education Longitudinal Study of 1988 (NELS:88) surveys of eighth-grade schools, students, teachers, and parents, sponsored by the National Center for Education Statistics, along with other data collected expressly to focus on the importance of recommended practices for the middle grades, will help advance our knowledge of these crucial issues.

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3. Carnegie Task Force on Education of Young Adolescents, *Turning Points: Preparing American Youth for the 21st Century* (New York: Carnegie Council on Adolescent Development of the Carnegie Corporation, 1989); California State Department of Education, *Caught in the Middle: Educational Reform for Young Adolescents in California Public Schools* (Sacramento: California State Department of Education, 1987); and Maryland Task Force on the Middle Learning Years, *What Matters in the Middle Grades?* (Baltimore: Maryland State Department of Education, 1990).

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5. Anne C. Petersen, "Early Adolescence: A Critical Developmental Transition," paper presented at the annual meeting of the American Educational Research Association, San Francisco, 1986.

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7. William M. Alexander and Paul S. George, *The Exemplary Middle School* (New York: Holt, Rinehart & Winston, 1981); Gail Dorman, *Middle Grades Assessment Program* (Carrboro, N.C.: Center for Early Adolescence, 1984); D. H. Eichhorn, *The Middle School* (New York: Center for Research in Education, 1966); Paul S. George, *The Middle School: A Look Ahead* (Columbus, Ohio: National Middle School Association, 1977); Joan Lipsitz, *Successful Schools for Young Adolescents* (New Brunswick, N.J.: Transaction Books, 1984); and John H. Lounsbury, *Perspectives: Middle School Education, 1964-1984* (Columbus, Ohio: National Middle School Association, 1984).

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9. Similar findings have been reported in other surveys that cover less representative samples of less extensive accounts of middle-grade practices, including Gordon Cawelti, "Middle Schools: A Better Match with Early Adolescent Needs, ASCD Survey Finds," *ASCD Curriculum Update*, November 1989; and William M. Alexander and C. Kenneth McEwen, *Schools in the Middle: Status and Progress* (Columbus, Ohio: National Middle School Association, 1989).

10. Mac Iver and Epstein, p. 18.

Tracking the Middle Grades: National Patterns of Grouping For Instruction

Mr. Braddock reaches the disquieting conclusion that learning opportunities in the middle grades remain highly stratified.

BY JOMILLS HENRY BRADDOCK II

NEARLY EVERY school serving early adolescents must face the dilemma of dealing with students' diverse academic skills and, at the same time, minimizing the use of labels that create invidious distinctions, lower students' self-esteem, and lead to feelings of apathy. Used wisely, instructional grouping practices help schools meet the varying needs of students and create a positive learning climate in schools. Used unwisely, such grouping practices exaggerate differences, label some students as slow or stupid, and result in a poor climate for learning.

There has been a dramatic trend in recent years to alter the grade span of schools that include the middle grades, but it is not clear that the changes in grade span have been accompanied by other organizational changes that are conducive to creating more appropriate learning environments for early adolescents. For example, we do not yet know whether the trend away from junior high schools (7-9) and toward middle schools (6-8) means that these schools use the new scheduling and grouping practices that have been suggested by recent theories on appropriate learning environments for early adolescents. To shed some light on this question, I will present some current data on the use of between-class grouping and regrouping in American schools serving early adolescents, taken from the recent national survey of middle-grade schools conducted by the Johns Hopkins University Center for Research on Elementary and Middle Schools.

The actual practices of scheduling and grouping used at a given school are affected by such local constraints as available human and material resources, demographic conditions, and educational philosophies.[1] These local constraints can include the size and mix of student enrollment, the expertise of the staff, the available space and instructional materials, and the regulations affecting curriculum requirements and allocation of time. Within these constraints, many schools are able to institute quite complex scheduling and grouping practices to address their educational goals.[2]

In the middle grades ability-grouped class assignment often takes the form of block scheduling. That is, students are assigned to one class by ability and move together from subject to subject. Less frequently, students may be assigned by ability to each subject separately. Some block schedules keep students together

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A Day in the Life of an Exemplary Middle School

Victoria Voelker

Music teacher Frank Penwell demonstrates correct fingering for a student during a group piano lesson. Students can also pursue their musical interests in the school's band, orchestra, or choir.

for instruction from several teachers: students move as a single group from teacher to teacher throughout the day, or each class of students remains in the same room and teachers move as instructional periods change. In other cases, where instructional regrouping of students occurs within a classroom, students may work with different classmates over the course of a school day – even if they are taught all subjects by only one or two teachers.

Keeping students in heterogeneous classes most of the day but regrouping them for selected subjects (e.g., reading or mathematics) is a common practice in elementary schools. For example, a school might schedule three fifth-grade reading classes to meet concurrently so that students would leave their heterogeneous homerooms and join a class organized according to reading levels. Similarly, middle or junior high school students may be grouped by ability for some subjects but not for others.

However, research strongly suggests that grouping decisions can have a negative impact on some students if a school establishes broad, rigid tracks based on general tests of performance or ability. In these situations, students in the lowest tracks or ability groups are often stigmatized by teachers and peers as poor learners. They then internalize these negative expectations and develop poor self-images and a lack of confidence in their abilities as learners. Walter Schafer and Carol Olexa quote a student who is painfully aware of the demoralizing effects of being assigned to a low track:

> When you first go to junior high school you do feel something inside – it's like an ego. You have been from elementary to junior high, you feel great inside. . . . You get this shirt that says Brown Junior High . . . and you are proud of that shirt. But then you go up there and the teacher says – "Well, so and so, you're in the basic section, you can't go with the other kids." The devil with the whole thing – you lose – something in you – like it goes out of you.[3]

Specific advantages and disadvantages have been cited for homogeneous as opposed to heterogeneous grouping of students.[4] On the one hand, homogeneous grouping is assumed to permit instruction that is better targeted to the actual needs of students and thus can motivate them more effectively. On the other hand, homogeneous grouping practices may not reduce heterogeneity enough to provide better instruction, may incorrectly assign many students (if based on a single or infrequently assessed criterion), may result in racially or ethnically identifiable classes or tracks in desegregated schools, may stigmatize students and teachers in low groups, or may lead to the creation of academic elites. A heterogeneous mix of students, however, may offer important learning opportunities to all individuals in the class.

The way students are assigned to classes also defines their peer groups. Some middle school educators have maintained that keeping the same limited number of classmates together for most activities in the middle grades will help the personal development of early adolescents. Clear research evidence to assess this prediction is not available. However, there is little disagreement that rigid tracking that produces stable groups of poor achievers is not a good idea because of the negative images that accompany placement in the low tracks.

ABILITY-GROUPED CLASS ASSIGNMENT

Homogeneous instructional groups can be established through between-class or within-class assignments. Whichever method is used, students can be grouped separately for each subject, according to their prior performance. Our survey of middle-grade principals asked questions to determine the particular subjects at each grade level in which students are assigned to homogeneous classes according to their abilities or levels of achievement.

How pervasive are ability-grouped class assignments in the middle grades? Overall, the use of between-class ability grouping or "tracking" to create classes that are homogeneous in ability is not uncommon in grades 5 through 9. However, the principals' responses (presented in Table 1) reveal some important differences in grouping practices by grade level and subject.

Table 1 shows the percentage of schools that use homogeneous grouping in all, some, or none of their classes at specific grade levels. Roughly two-thirds or more of the nation's schools serving early adolescents report using at least some between-class ability grouping, and more than 20% assign students to all of their classes according to ability. The proportion of principals reporting that no homogeneous grouping is used declines from a high of about one-third of the schools at grade 5 to about one-fourth of the schools at grade 8.

An earlier analysis of these data determined that the practice of ability group-

TABLE 1.

Grouping and Regrouping Practices in Schools Serving Early Adolescents

Grouping Practices	Grade 5 %	 6 %	 7 %	 8 %	 9* %
Between-Class Ability Grouping					
All subjects	**23**	**22**	**22**	**23**	**11**
Some subjects	**40**	**44**	**47**	**50**	**47**
Reading	96	86	63	54	16
English	24	44	54	54	62
Mathematics	57	77	84	88	94
Science	4	5	14	16	38
Social Studies	4	4	10	10	19
No subjects	**37**	**34**	**31**	**27**	**42**
Regrouping for Instruction					
Keep same classmates	69	52	34	31	17
Change classmates for one or two subjects	28	32	21	21	23
Change classmates for most subjects	3	16	45	48	60

*Grade 9 figures are underestimates because of the exclusion of 9-12 high schools from the survey.

ing for all subjects is more often found in schools with sizable (more than 20%) enrollments of African-American and Hispanic students. And this relationship between full-scale ability grouping and ethnic concentration was found to persist even when schools are disaggregated in terms of the "average" ability of students.[5] Thus the concerns raised by the National Education Association and the Carnegie Task Force on Education of Young Adolescents, among others, regarding the impact of school tracking and grouping practices on students' equal access to learning opportunities warrant further and more careful examination.[6]

In other analyses based on data from the Johns Hopkins national survey, Joyce Epstein and Douglas Mac Iver found a variety of relationships between type of middle-grade school and ability grouping.[7]

1. The number of *students* who experience at least some homogeneous grouping increases across the grades from about 70% of fifth-graders to 80% of sixth-graders and 85% of seventh-, eighth-, and ninth-graders.

2. The proportion of *students* who are in fully "tracked" programs, in which all classes are grouped by ability, increases from 12% of fifth-graders to about 25% of sixth- through ninth-graders.

3. In the fifth and sixth grades, middle schools are more likely than K-8 schools to have some classes grouped by ability but less likely to have all classes grouped by ability. In part this difference stems from the differing numbers of students per grade level who can be regrouped during a school day. This pattern also reflects middle schools' attempts to deal with two seemingly conflicting demands: to help students fulfill their own potential (through some limited and flexible grouping by ability, as in math classes) and to help students meet and work with students who are different from themselves (through some heterogeneous grouping in other classes, as in social studies, science, or exploratory activities).

4. Middle schools, 7-8 intermediate schools, and junior high schools use similar grouping practices in the seventh and eighth grades. Between 9% and 17% of these schools have no classes that are grouped homogeneously, between 24% and 27% have all classes grouped homogeneously, and between 57% and 64% have some classes grouped by ability.

5. Students in "combination schools" (K-8, 7-12, K-12) experience less between-class grouping than do students in schools devoted solely to the middle grades. Of the schools dedicated to early adolescents, junior high schools use more homogeneous grouping than do middle schools or 7-8 intermediate schools. Middle-grade students in K-12 combination schools are least likely to be grouped by ability in any class. The number of pupils per grade level – even more than the size of the school – probably affects how much ability grouping occurs at different grade levels in schools of different grade spans. For example, with an average of only 25 students per grade level, classes in K-12 schools are typically heterogeneous. Grouping, when it occurs in K-12 schools, is within-class.

Our survey also asked principals about the academic subjects in which students are grouped by ability. Table 1 shows the percentage of schools that use between-class ability grouping with early adolescents, by academic subject and grade. In grades 5 and 6, reading (96% and 86%) and mathematics (57% and 77%) are the two subjects most often grouped by ability. In grades 7 and 8, mathematics (84% and 88%), reading (63% and 54%), and English (54% for both grade levels) are most often grouped by ability. In grade 9, reading (grouped by ability 16% of the time) all but disappears as a separate subject, while science (38%) is increasingly grouped according to prior achievement. Epstein and Mac Iver found that English is not as frequently grouped homogeneously in 6-8 middle schools as it is in 7-8 intermediate or in 7-9 junior high schools, while reading is more often grouped homogeneously in middle schools, where it is more likely to be a separate subject.[8]

Schools increasingly assign students to ability-grouped classes in mathematics as they move to higher grades (from 57% in grade 5 to 94% in grade 9). Schools also increasingly group students by ability in English as they move to higher grades (from 24% in grade 5 to 62% in grade 9). Across all grades, science and social studies are the subjects least often grouped by ability.

REGROUPING FOR INSTRUCTION

School policies may dictate that students change classmates once, twice, or many times during the school day. Students may be assigned to all subjects by ability, based on a single criterion (such as a composite achievement or reading test score), or students may be regrouped for different subjects, based on several criteria (such as test scores in reading, math, and science; recommendations from teachers; or students' special interests). When schools use a single criterion for grouping decisions, students typically follow the same classmates (who are similar in reading skills, for example) from class to class, even though their abilities may differ in other subjects. When schools use multiple criteria for placement decisions, students often have different classmates with similar abilities in each subject. Variations in grouping and scheduling practices may purposely create some classes grouped by ability and others grouped heterogeneously.

In the middle grades, students' classmates may be drawn from a small number of students on a team or from a large

A Day in the Life of an Exemplary Middle School

Vladimir [illegible]

Intense concentration shows on the face of this student as he puts the finishing touches on a clay croc.

number of students from one or more grade levels in the school. Changing classmates means that students have more opportunities to interact with others who have different skills and talents. If students change classmates too often, however, they may feel unattached and unknown to any group of peers or friends.

Our survey asked middle-grade principals which of three scheduling practices is used to define an individual's classmates in each grade: 1) students stay with the same classmates for all academic subjects; 2) students remain with the same class for most academic subjects but are regrouped with students from other classes for one or two academic subjects; or 3) students change classmates for all or most academic subjects. The bottom part of Table 1 shows considerable variation in current middle-grade practices of regrouping for instruction.

The use of intact ability-grouped class assignments declines as students move to higher grades (from a high of 69% in grade 5 to a low of 17% in grade 9). Conversely, there is a marked increase in regrouping for instruction as students move to higher grades (from a low of 3% in grade 5 to a high of 60% in grade 9). Grade 7 appears to be the pivotal point where regrouping for most subjects becomes the norm. Nevertheless, even at grade 7, roughly one-third of middle-grade principals reported no regrouping for instruction.

Epstein and Mac Iver's analysis of the same data found that *students* in the sixth grade are about equally divided: one-third keep the same classmates for all subjects, one-third change classmates for one or two subjects, and one-third change classmates for most periods during the day. Middle schools (6-8) show the greatest use of regrouping in sixth grade: almost 40% of sixth-graders in middle schools change classmates for most subjects, and by grade 7 most students change classmates for most subjects. In combination schools (K-8, 7-12, and K-12), however, there are still significant numbers of students – between one-third and one-half – who remain with the same classmates all day. Regrouping is especially common in middle schools, 7-8 schools, and junior high schools. By grade 8, 70% of the students in middle schools and 84% of the students in junior high schools are regrouped for three or more classes during the school day.[9]

Robert Slavin cites three important advantages of regrouping for selected subjects over ability-grouped class assignment.[10] First, students who remain in a heterogeneous group most of the day are likely to identify with that group, thus reducing the labeling effects and eliminating the possibility of creating racially identifiable ability groups. Second, students grouped only for specific subjects are likely to be grouped solely on the basis of their achievement in reading or mathematics, not according to general achievement or ability level, and this practice leads to a meaningful reduction in heterogeneity in the skill being taught. Third, regrouping plans tend to be more flexible than ability-grouped class assignment, because changing between reading or mathematics classes is less disruptive than changing basic class assignments. Thus any errors in assignment can be more easily remedied, and any changes in a student's performance level can be accommodated with a change in grouping.

In sum, regrouping for instruction has been found to be effective if the instructional level and pace are completely adapted to the students' performance level and if the regrouping is done for only one or two subjects so that students stay in heterogeneous placements most of the day. Conversely, when regrouping has been done without adapting the pace and level of instruction or when it has been done in more than two different subjects, it has not been found to be instructionally effective.

BEYOND THE TRACKS

The problem of heterogeneity in student populations must be addressed in some way. But ability-grouped class assignment, by far the most common strategy, has repeatedly been found to be ineffective for increasing student achievement and to exert the greatest potential harm of all grouping plans.[11]

However, there are alternatives to rigid tracking that can address the heterogeneity of students' needs and interests and at the same time exert a less negative impact on the personal development of individuals who are behind. The overuse and misuse of tracking in the middle grades is almost inevitable when a single general criterion – such as grade-point average or composite score on the most recent achievement test – is used to determine a student's placement for the academic program. Because such unfortunate general practices seem to be common at all levels of schooling and because innovative uses of tracking are hard to find, we suggest the following research-based strategies for limiting and improving tracking practices.

1. *Between-class tracking.* If used at all, between-class tracking should be limited to the basic academic courses in which the students' different levels of prior preparation are clearly the major reasons for grouping for instruction. In the elementary grades, research has indicated that grouping plans are most beneficial when students remain in heterogeneous classes for most of the day and are regrouped only in mathematics and reading on the basis of their current level of skill. For the middle grades, it is reasonable to predict that tracking would serve best if it were similarly limited or perhaps even further restricted to subjects (e.g., mathematics) that have specific prerequisites at each step of learning.

2. *Placement criteria and allocation of resources.* Even when tracking is limited to basic courses, there is a need for better criteria for placement and better ways of allocating resources. Tracking in basic courses makes sense only if it provides students with a learning environment more closely matched to their current needs. For example, the criteria for assigning students to courses should be current and differentiated so that placing an individual in upper-level mathematics and lower-level reading would not be unusual. At a minimum, separate tests and recent grades in each tracked subject should be used. School districts should also strengthen instruction in the lower tracks by reducing class sizes and allocating more resources to these groups. Districts should also work with teacher representatives to devise regulations and incentives that bring more of the best teachers to the students who need them most.

3. *Extra help.* In nontracked academic classes, all students should be given better opportunities to earn good grades. Reasonable sources of extra help should be regularly available to any student having difficulties in a nontracked class. For example, the school might provide additional coaching classes or sessions with peer tutors during regular school hours. In addition, criteria for awarding grades should permit credit for growth or progress so that students have different ways of demonstrating competence and can be rewarded for effort.

4. *Experimentation.* Schools should experiment with placement methods for tracked courses. Students should be offered greater involvement in the placement process and should be given incentives to carry out challenging assignments. Schools could foster commitment to demanding upper-track courses by giving older students more responsibility for their own class assignments and by structuring an incentive grading system. For example, students might be given some choice of track in required courses with interesting grading options (such as pass/fail or extra credit for certain offerings).[12]

There are other alternatives to rigid tracking that can address the heterogeneity of student needs and interests with fewer negative effects. Cooperative learning – an approach that allows students to work in small, mixed-ability learning teams – is perhaps the most widely recommended and best-documented instructional strategy for addressing the problem of student diversity in heterogeneous classrooms. Research has shown that when cooperative learning teams are rewarded in accordance with the learning of all group members, students learn consistently more than do students in traditional settings.[13] Yet we find that, at present, middle-grade schools are making limited use of such alternative approaches for addressing student diversity. According to the reports of principals in our survey, cooperative learning, for example, is used by only 21% of the schools in which seventh-graders are grouped heterogeneously for all instruction in the academic subjects. Middle schools, however, were more than twice as likely (34%) to report using this highly recommended and proven practice than were 7-8 intermediate schools (16%) or 7-9 junior high schools (15%).

The use of between-class ability grouping in the middle grades is widespread: roughly two-thirds of the middle-grade principals surveyed reported that their schools use the practice in at least some academic subjects, while more than one-fifth said that their schools do so in all subjects. Moreover, the use of between-class grouping is especially common in middle-grade schools with high concentrations of Hispanic and African-American students. Although the regrouping of students for instruction is not *un*common, between one-third and one-half of all middle-grade students remain with the same classmates all day.

These are disquieting findings. They mean that learning opportunities in the middle grades remain highly stratified – despite a middle school philosophy that encourages heterogeneous classes, despite various calls for school reform and restructuring to develop critical thinking skills among the nation's youth, and despite exhortations to insure that all children are provided equal access to learning opportunities. If schools serving early adolescents are ever to achieve these goals, they must find effective alternatives to tracking.

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A Day in the Life of an Exemplary Middle School

Victoria Voelker

Vladimir Bubnik

Peggy Schuh (above) gives students individual instruction in math class. Classmates (below) carry out a cooperative learning activity. Students in other math classes track their investments in the stock market — an award-winning project developed by Schuh. Student contributions are limited to a few dollars each, and a local broker acts as advisor for the project. Profits or losses are shared at the end of the term.

Staffing Decisions In the Middle Grades:

Balancing Quality Instruction and Teacher/Student Relations

The teaching staff is the foundation on which a successful learning environment for early adolescents is built, Mr. McPartland maintains – and the way in which a staff is assembled and deployed can make a major difference in student outcomes.

BY JAMES M. McPARTLAND

IT IS NEVER easy to succeed at the dual goals of providing high-quality instruction and creating positive teacher/student relations in the middle grades. At least part of the difficulty can be attributed to staffing practices and the organization of middle-grade schools. The Carnegie Task Force on Education of Young Adolescents acknowledges this problem:

> Many teachers of young adolescents today dislike their work. . . . For some, this feeling comes from the structure of middle grade schools; like the students, they feel overwhelmed by the impersonality of the environment, and they feel ineffective with the large number of students they must teach. For others, it comes from a lack of training related to early adolescence.[1]

But staffing patterns can also make a real difference in helping actually to achieve these goals. In this article, I discuss how organizational decisions about departmentalization and other staffing arrangements affect the goals of middle schools. First, I present data from Education in the Middle Grades: A National Survey of Practices and Trends, conducted by the Johns Hopkins University Center for Research on Elementary and Middle Schools, to describe current staffing practices in the middle grades. Next, I present state data to show how staffing patterns that best serve one goal may sometimes interfere with the accomplishment of another important goal. Finally, I suggest different staffing decisions that can help to balance competing middle school goals.

NATIONAL TRENDS

Theoretically, staffing practices in the middle grades can vary along a continuum from the completely self-contained classroom, in which a single teacher is in charge of all major subject-matter instruction for all students in a particular group, to the completely departmentalized approach, in which each teacher specializes in a single subject area and instructs several different classes of students in this subject. Between these two extremes lie several staffing patterns, such as semidepartmentalized, in which a teacher instructs more than one class in more than one related subject (such as math and science) but not in all major subjects, and team teaching, in which two or more teachers provide instruction to a shared group of students.

The staffing alternatives determine the number of different teachers each student will encounter for instruction in the major subjects. At one extreme, a particu-

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After completing lab assignments, eighth-grade science students in Bridget Davenport's class review their findings (above), then begin a discussion of covalent bonding (below). Extraordinary contributions to class discussion earn extra credit for students.

A Day in the Life of an Exemplary Middle School

lar student will have a single teacher for most of the day. At the other extreme, a student will change teachers for each period of the school day and receive instruction from four, five, or more teachers for the major academic subjects. At the intermediate points along the continuum, a student will encounter two or three different teachers for instruction in the major subjects.

Teaching staffs in the middle grades can also differ in the kinds of previous training and certification each member of the faculty has. Some middle-grade schools may employ primarily teachers with an elementary school background, while other middle-grade schools may have faculties that, in the main, have been prepared and certified to teach specific subjects in the secondary grades. Many middle-grade schools will have a mix of teachers of these two types.

Tabulations from the national survey show that middle-grade education in the U.S. is conducted primarily by teachers who are certified in specific subjects for secondary school instruction and who are assigned to highly departmentalized instructional roles. However, there are some interesting exceptions, especially in the early middle grades.

In the national survey we asked principals to report the number of different teachers assigned to instruct the typical student in the basic subjects at each grade level. This number could range from one teacher to four or five different teachers. Table 1 shows that American schools are much more likely to use specialized staffing patterns in the middle grades, with a definite tendency (from grade 5 through grade 9) to move from a smaller number of different teachers to a larger number of different teachers for each student.

Table 1 shows that only 29% of fifth-grade students receive all their instruction from a single teacher. Moreover, that percentage decreases to 7.5% in grade 6 and to 1% or less in grades 7, 8, and 9.[2] The same trend is apparent in the percentages of students who receive their instruction from just two different teachers: the 25.9% in grade 5 decreases to 14.1% in grade 6 and to vanishingly tiny percentages in grades 7, 8, and 9. Combining the first two rows of Table 1, we can see that only in grades 5 and 6 do significant proportions of students receive the major portion of their instruction from no more than two different teachers (54.9% in grade 5 and 21.6% in grade 6).

TABLE 1.

Number of Different Teachers in the Major Academic Subjects for the Typical Middle-Grade Student

Different Teachers Per Student	Grade 5 %	Grade 6 %	Grade 7 %	Grade 8 %	Grade 9 %
1	29.0	7.5	1.2	0.9	0.4
2	25.9	14.1	1.6	1.1	0.0
3	20.8	16.4	4.8	2.9	1.3
4	12.5	19.1	20.0	19.0	14.2
5+	11.8	42.9	72.4	76.1	84.1
Average number of different teachers at each grade level	2.5	3.8	4.6	4.7	4.8

At the other extreme, we see that even in grade 5 nearly 12% of students have five or more different teachers to cover the major subjects. This figure rises to 42.9% in grade 6 and to more than 70% in grades 7, 8, and 9. Combining the final two rows of percentages in Table 1, we see that more than 90% of students in grades 7, 8, and 9 are in highly departmentalized schools in which they have four or more different teachers for the major subjects.

These trends vary somewhat for schools of different sizes and for schools with different grade spans. Schools in our sample that cover all elementary grades (such as K-8 schools) have a somewhat larger percentage of self-contained classrooms in grades 5 and 6. Yet even in these schools less than 40% of fifth-graders and only about 20% of sixth-graders are in self-contained classrooms. At the other extreme, the traditional junior high school (grades 7 through 9) is the most fully departmentalized at each grade level. The typical middle school, serving grades 6 through 8, exhibits nearly the same distributions as those shown in Table 1 for all schools.

Thus U.S. schools covering the middle grades lean strongly in the direction of departmentalized staffing. The number of different teachers per student averages 2.5 in grade 5, 3.8 in grade 6, and over 4.5 in grades 7, 8, and 9 (bottom row of Table 1). Some schools limit departmentalization in grade 5 or grade 6 by keeping the number of different teachers per student at two, but extensive departmentalization is almost universal in grades 7, 8, and 9.

In our national survey, we also asked principals how many of the teachers in their schools have elementary certification, how many have secondary subject-matter certification, and how many have specific middle-grade certification. Our data indicate that teachers with specific certification and extensive preparation for middle-grade instruction are not common. Indeed, states are only recently beginning to foster such specialized offerings in teacher training programs, and the programs that do exist have not yet become very popular.[3] Our data also show that teachers with secondary subject-matter certification predominate on middle-grade faculties, especially in the typical junior highs and in schools serving grades 7 and 8.

Table 2 shows the distribution of middle-grade students in schools with different mixes of teachers by type of certification. Some 51.7% of all middle-grade students are in schools in which less than one-quarter of the teachers hold elementary certification, and 28.4% are in schools in which between one-quarter and one-half of the teachers hold elementary certification. Combining these percentages shows that 80.1% of middle-grade students are in schools in which less than half of the faculty members hold elementary certification. Table 2 also shows that teachers with elementary certification are less common in schools that serve grades 7 and 8 than in middle schools and that in the typical junior high (grades 7 through 9) they are rare indeed.

Conversely, the bottom part of Table 2 shows the predominance of teachers in middle-grade education who hold secondary subject-matter certification. Overall, 59.4% of middle-grade students attend schools in which a majority of the teachers hold secondary subject-matter certification. Once again, junior highs that serve grades 7 through 9 show the most extreme concentrations of teachers who hold secondary subject-matter certification.

ORIENTATION OF TEACHERS

Such issues as departmentalization and the certification of teachers in the middle grades are interesting because different staffing patterns can affect the orientations teachers bring to their classrooms. Teachers with secondary certification or those who work in fully departmentalized schools are most likely to exhibit a "subject-matter" orientation. They are apt to take special pride in being expert in a particular subject area, and they can develop outstanding classroom activities when they are responsible for a limited number of preparations in a single subject-matter field. Such teachers can be very valuable in meeting the need for more demanding curriculum content in the middle grades and in helping early adolescents develop the higher-order thinking skills appropriate to each subject area. It is reasonable to expect that specialized teachers with a strong subject-matter orientation can best achieve the goals of providing high-quality instruction in the content areas in the middle grades.

On the other hand, there is something to be gained in the middle grades from teachers with elementary certification who can work in the self-contained or semidepartmentalized settings that are more likely to support a "student-centered" orientation. Such teachers may tend to be more concerned with *both* the academic and the personal development of individual students. Because they are responsible for a smaller total number of students, they may also be better able to attend to the needs and difficulties of individual students.

This student-centered orientation can also be very useful in the middle grades to address the interpersonal and emotional aspects of early adolescence. Positive, caring relationships between teachers and students are especially important in the middle grades because students at this stage of development continue to need adult guidance and support, even as they seek greater independence and self-reliance and become more susceptible to pressures from peers and nonschool influences. Thus we might predict that the goal of providing a supportive human environment would be accomplished more often when teachers have had elementary school training that emphasizes the development of the "whole child" and when staffing assignments allow teachers to concentrate on a limited number of students.

This contrast between subject-matter orientation and student-centered orientation points to some potential conflicts in school goals created by staffing patterns. Staffing practices that best serve the goal of high-quality instruction in content may interfere with the development of positive and supportive relationships between teachers and students. And staffing ar-

TABLE 2.

Percentage of Middle-Grade Students in Schools with Different Proportions of Teachers Certified for Elementary or Secondary Teaching

	Grade Span of School			
Teachers with Elementary Certification %	**All Middle-Grade Schools %**	**6-8 %**	**7-8 %**	**7-9 %**
0-25	51.7	35.6	58.8	83.1
25-50	28.4	38.5	27.4	12.0
50-75	12.3	16.0	10.9	4.4
75-100	7.6	9.9	2.9	0.5
Teachers with Secondary Certification %				
0-25	21.7	21.0	11.5	6.9
25-50	18.9	25.8	14.1	8.6
50-75	25.5	31.1	32.0	13.7
75-100	33.9	22.1	42.4	70.8

A Day in the Life of an Exemplary Middle School

Above, a sixth-grader presents a science project on acid rain to classmates. Other students studied waste disposal, the ozone layer, and the Alaskan oil spill. Below, a bulletin board illustrates the environmental focus of science classes for the 1989-90 school year.

Does departmentalization increase the quality of instruction and raise student achievement at some cost to teacher/student relationships?

rangements that produce the most supportive human environments may work against the development of effective learning activities in each subject area.

EFFECTS ON STUDENTS

Using 1986 Pennsylvania data on sixth-graders and their schools, we tested the idea that staffing decisions in the middle grades may sometimes involve tradeoffs between the goals of high-quality subject-matter instruction and positive teacher/student relations. Students from 433 Pennsylvania schools that included a sixth grade completed achievement tests in each major subject and answered questions about conditions in their schools, including 14 items about teacher/student relations and five items about their satisfaction with learning activities in each major subject area. Students also reported such background information as their parents' level of education and the availability of educational materials in the home.[4]

Principals in each school provided information on their staffing patterns, including the number of different teachers for the typical sixth-grader and the incidence of self-contained, departmentalized, or mixed teaching assignments. Thus we can study how the academic achievement and attitudes of sixth-graders are related to staffing patterns, with statistical controls on the students' family backgrounds and the size and location of the school.

Does departmentalization increase the quality of instruction and raise student achievement while decreasing the quality of teacher/student relationships? The research provides a complex but coherent picture.

We found strong evidence that the relationships between teachers and students in the sixth grade are more positive in schools that assign teachers to self-contained classrooms than in schools that are departmentalized. In general, the fewer different teachers per student in a school, the more likely sixth-graders are to agree strongly with statements such as "I feel my teacher understands me" or "I feel my teacher cares about my class." This effect remains statistically significant when school size and location and the socioeconomic status of students are taken into account.[5]

On the other hand, research also supports the positive effect of departmentalization on student achievement, especially in the later middle grades in such specialized subjects as science and history. The positive effects that specialized teachers can have on student achievement have been more thoroughly documented for seventh-graders than for sixth-graders. Recent analyses of the 1985-86 National Assessment of Educational Progress (NAEP) found that seventh-graders who were taught by specialized subject-matter experts showed higher achievement in science and math than did seventh-graders taught by less-specialized teachers.[6]

Consistent with the NAEP results, our state data from Pennsylvania showed that sixth-graders' subjective perceptions of the quality of instruction in science and social studies were much higher in departmentalized settings. Moreover, the actual performance of sixth-graders in departmentalized schools was also significantly higher in science and social studies relative to their achievement in reading or math.[7] However, when average achievement differences between schools were examined independently for each subject rather than for one subject relative to others, it appeared that sixth-graders from self-contained classrooms performed best, especially if the students were from lower socioeconomic backgrounds.[8]

Thus the sixth-grade achievement results are open to different interpretations. If the comparison of performance in specific subjects relative to performance in other subjects is assumed to be the most appropriate methodology (since longitudinal controls on earlier achievement levels are not possible with our state data), then the sixth-grade results match the results of previous research with national samples of seventh-graders. That is, middle-grade teaching staffs made up of subject-matter specialists can be expected to produce higher student achievement in such subjects as science and history. But if the statistical controls on family background are given greater weight, the state results would postpone the use of departmentalization until after grade 6, especially for schools with large populations of disadvantaged students.

Taken together these findings give some direct empirical evidence of the actual tradeoffs between teacher/student relations and student achievement as a result of different decisions with regard to middle-grade staffing. In 1990 new national data on the effects of departmentalization on middle-grade students will become available, which will allow us to reexamine these issues.[9]

STAFFING PATTERNS AND SCHOOL GOALS

The practical implication of the effects of staffing patterns on goals for the middle grades is that schools should strive not to lean too much in one direction or the other. Most middle-grade schools will wish to provide both high-quality instruction and a supportive human environment. Two approaches appear feasible: 1) to balance staffing decisions between the extremes so that neither goal is overlooked or 2) to compensate for imbalances in staffing patterns by using school practices designed to achieve the goal that is most at risk.

Departmentalizing gradually during the middle-grade years is one important way of balancing the risks to major goals, especially for schools that serve disadvantaged students, who seem to fare better with a limited number of different teachers. For example, a school might keep self-contained classrooms or semidepartmentalized assignments (involving only two different teachers for each student) in grades 5, 6, and possibly 7 and move to fully departmentalized assignments for the higher grades. In the case of two-teacher teams, one might be in charge of math and science instruction while the other handles reading, language arts, and social studies. Such arrangements permit some degree of specialization and expertise in instruction while limiting the number of different teachers with whom each student must deal. Indeed, our national survey data indicate that some gradual phasing in of departmentalization is now occurring in some schools.

A similar strategy to balance risks would be to see to it that some teachers with elementary school training are included on the staffs of middle-grade schools and assigned primarily to students who have just made the transition to the middle-grade school. Of course, a preferred direction for the future is to develop training and certification for teachers that explicitly focus on the middle-grade curriculum and on the needs of early adolescents so that individual teachers will be able to strike an appropriate balance between subjects and students.[10]

However, because of various local conditions, it may not always be possible to strike a happy medium with regard to staffing decisions in the middle grades. School size, the expertise of the existing staff, certification opportunities, and collective bargaining agreements may constrain staffing decisions in a particular school. It then becomes important to recognize the potential weaknesses of the staffing patterns being used and to compensate with specific actions to offset them.

For example, a fully departmentalized program offering high-quality instruction can be made to work well even for sixth-graders if the school recognizes that other actions need to be taken to provide close teacher support and supervision. Such actions might include assigning each student a specific staff member as advocate or mentor and providing a regularly scheduled time when students and mentors can meet to discuss the students' problems and progress. In the same vein, interdisciplinary teams of teachers who share the same instructional group of students can deal with the needs of individual students if time and training are available to team members. In other cases, such as self-contained classrooms in which the human relations are good but instruction is not strong in all subject areas, inservice training activities or specialized support can be provided to strengthen classroom activities in science, history, or any other subject in which teachers may not have been well-trained.

In general, educational leaders in the middle grades should understand how particular staffing decisions involve trade-offs between important school goals, so that they can seek sensible balance whenever possible and take specific actions to minimize any weaknesses that remain. The teaching staff is the foundation on which a successful learning environment for early adolescents is built, and the way in which a staff is assembled and deployed can make a major difference in student outcomes.

A Day in the Life Of an Exemplary Middle School

Vladimir Bekesh

Vladimir Bekesh

Above, a sixth-grader answers questions about his project on the ozone layer. Below, sixth-graders take part in a science game designed to help them learn about the interrelationships of resources, habitat, and the size of deer populations. An "outdoor lab" (not shown) was funded by parents, and the formerly manicured lawn of a courtyard now sports indigenous grasses and a small swamp.

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1. Carnegie Task Force on Education of Young Adolescents, *Turning Points: Preparing American Youth for the 21st Century* (New York: Carnegie Council on Adolescent Development of the Carnegie Corporation, 1989), p. 58.

2. Because our sample is of schools that contain grade 7, strictly elementary schools (K-5 or K-6) are excluded. Such schools are usually smaller and staffed primarily by elementary-certified teachers, so they can be expected to have much higher percentages of self-contained classroom assignments for grades 5 and 6 than the percentages shown in Table 1.

3. Carnegie Task Force. . . , pp. 58-60.

4. The student data were provided by the Pennsylvania Educational Quality Assessment (EQA), which is administered annually by the state education agency to districts that request it. The sample is large and diverse but not representative of the entire state, since the two largest districts are not included. Staffing patterns were reported on a special supplementary survey administered to participating schools by Johns Hopkins University in cooperation with the state agency. For further details, see James M. McPartland, J. Robert Coldiron, and Jomills H. Braddock II, *School Structures and Classroom Practices in Elementary, Middle, and Secondary Schools* (Baltimore: Johns Hopkins University Center for Research on Elementary and Middle Schools, 1987).

5. See James M. McPartland, *Balancing High Quality Subject-Matter Instruction with Positive Teacher-Student Relations in the Middle Grades* (Baltimore: Johns Hopkins University Center for Research on Elementary and Middle Schools, 1987). See also Jacquelynne Eccles and Carol Midgley, "Stage-Environment Fit: Developmentally Appropriate Classrooms for Young Adolescents," in Carole Ames and Russell Ames, eds., *Research on Motivation in Education*, vol. 3 (New York: Academic Press, 1989), pp. 139-86.

6. See James M. McPartland and Shi-Chang Wu, *Instructional Practices in the Middle Grades: National Variations and Effects* (Baltimore: Johns Hopkins University Center for Research on Elementary and Middle Schools, 1988).

7. McPartland, op. cit.

8. See Henry Jay Becker, *Addressing the Needs of Different Groups of Early Adolescents: Effects of Varying School and Classroom Organizational Practices on Students from Different Social Backgrounds and Abilities* (Baltimore: Johns Hopkins University Center for Research on Elementary and Middle Schools, 1987).

9. In 1990 the National Center for Education Statistics of the U.S. Department of Education is scheduled to make available to the public the National Education Longitudinal Study of 1988 (NELS:88) data covering a large national sample of eighth-grade students and their schools.

10. Carnegie Task Force. . . , op. cit. K

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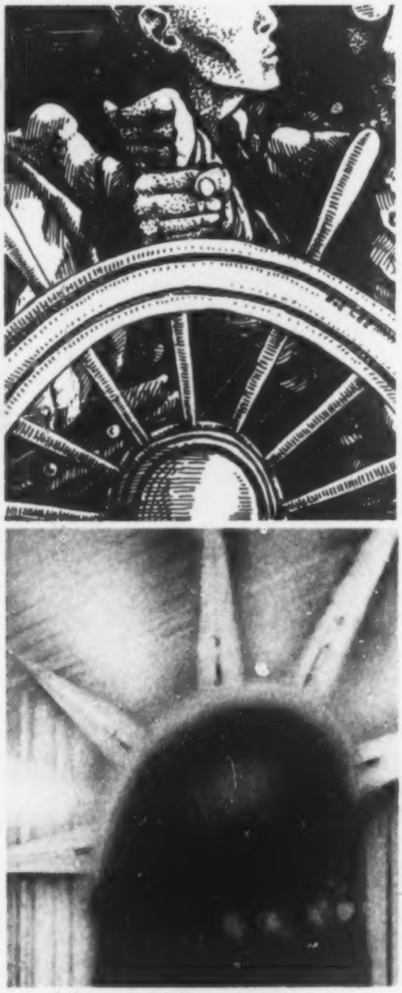

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Cover Illustration: Bruce Stoll

THE EDITOR'S PAGE

Heave Ho

WE'VE TRIED the easy things in school reform – more academic coursework, more tests for students, more tests for teachers . . . you know the litany. And the outcomes have been disappointing by any reckoning.

Now we seem to be reduced to just two options. We can yield to despair over the intractable problems of schooling in the U.S. Or we can bite the bullet and get started on the more difficult tasks of school reform – the ones that require us to adopt new roles and new ways of doing things.

The pieces of the puzzle of productive school reform are gradually falling into place. Just since the beginning of the new decade, the *Kappan* has published several articles that help to point the way.

In the January issue, Albert Shanker and Joseph Carroll shared with readers their visions of restructured schools. In the February *Kappan*, William Glasser suggested ways to help students *want* to do high-quality schoolwork, and a group of researchers from Johns Hopkins University laid out for readers the characteristics of effective schooling for early adolescents.

This month, Gene Maeroff provides a close look at an exemplary middle school, Sharon Conley and Samuel Bacharach tell readers how to go about implementing school-site management, and B. J. Meadows provides a first-person account of the pitfalls and promises of shared decision making. Also in this issue, Roland Barth pushes each of us to articulate a personal vision of a good school.

We need such visions more than ever today, because the reforms now facing us won't be accomplished at the stroke of a governor's pen. They require new modes of operating, greater personal flexibility, and more extensive cooperation across the entire profession. That means no more finger-pointing at bureaucratic central administrators, no more finger-pointing at wishy-washy principals, and no more finger-pointing at uncompromising teacher unions.

It's time to demonstrate unequivocally that we're all in this together, spurred on by a single aim: to make American education the very best that it can be. Whether the educational enterprise will survive the crushing criticisms of the late-20th-century will depend on our *united* efforts. We still may not be able to solve every problem visited on the schools by our changing society. But, until we work together to explore every conceivable option, we can't be held blameless for the failures of American education.

Moreover, the most effective approaches to school reform will differ, according to local circumstances. So we must seek out solutions building by building and district by district. That's why we need both personal visions of good schools and the courage to share them with one another in order to bring them to fruition.

Sometimes the task of improving the schools seems akin to moving a stubborn elephant. The easy response is to shrug our shoulders and spew a stream of excuses. The more difficult (and far more productive) response is to put our shoulders to the beast and shove. All of us. Together. – PBG

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Experiencing School Reform: The View from South Carolina

What is it like to be an educator in a state in which reform mania pervades the organizational culture of schools? Messrs. Ginsberg and Berry tell Kappan *readers.*

BY RICK GINSBERG
AND BARNETT BERRY

A RISING TIDE of school reform swept over America in the 1980s, leaving in its wake at least some legislation geared to improving schools in nearly every state. One of the most reform-minded states has been South Carolina, whose major education reform legislation, the Education Improvement Act (EIA) of 1984, has been favorably reviewed by several writers.[1] Thomas Timar and David Kirp established the school reform experience in South Carolina as an ideal, because it "demonstrates the need for balance between state accountability and local autonomy . . . [and] it shows that authority and responsibility must be distributed across the entire system of education."[2] Indeed, South Carolina's own analysis of the effects of the EIA indicates that there have been gains in a number of areas, including improved achievement test scores; better services for preschool, remedial, gifted and talented, and vocational students; and higher salaries for teachers.[3]

However, a thorough analysis of the impact of reform must go beyond merely listing new structural components in a school system or cataloguing increases in teacher salaries or in student test scores. Reform must also strive to affect the organizational culture of the schools in a positive way. As Timar and Kirp suggest, "Policy makers must focus their attention on making schools better places in which to work and generally more satisfying places for those who are associated with them."[4] We believe that ignoring the cultural perspectives associated with reform is shortsighted because problems in the organizational culture of schools can cripple teaching and learning in the long run – despite any short-term gains brought about by specific reforms. With this in mind, we raise the question, What is it like to be an educator in a state in which reform mania pervades the organizational culture of schools?

We can begin to answer this question by describing the impact of reform on educators in South Carolina. The recently released Carnegie study, *Report Card on Reform*, indicated that teachers throughout America are frustrated with much of the reform effort.[5] Concerning South Carolina, the Carnegie study was relatively positive: 40% of South Carolina teachers reported that teacher morale had improved – the highest figure in the nation. Nonetheless, a still higher percentage of South Carolina teachers (43%) indicated that morale had *declined* as a result of reform. While South Carolina has much to be proud of for its efforts to improve schools, we must conclude that many teachers and principals feel over-

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Illustration by Thomas Rhea

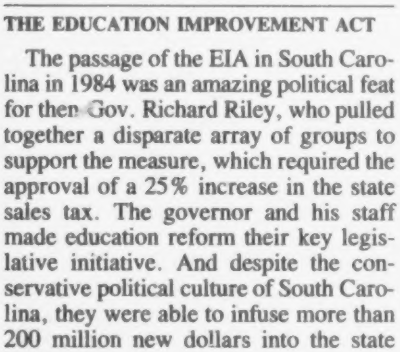
While surveys show that South Carolina educators support the *idea* of reform, many find its *implementation* troubling.

whelmed by the sheer volume of the mandates created by the EIA. Despite their support for the reform initiatives, these educators are crying out for changes in education policies.

THE EDUCATION IMPROVEMENT ACT

The passage of the EIA in South Carolina in 1984 was an amazing political feat for then Gov. Richard Riley, who pulled together a disparate array of groups to support the measure, which required the approval of a 25% increase in the state sales tax. The governor and his staff made education reform their key legislative initiative. And despite the conservative political culture of South Carolina, they were able to infuse more than 200 million new dollars into the state budget for education.

School reform, though not on as grand a scale, had actually started years earlier in South Carolina. The Educational Finance Act of 1977 moved to equalize spending among the state's 92 school districts. The Basic Skills Assessment Act of 1978 mandated testing requirements for students in the public schools. However, these and other forerunners of the EIA pale in comparison to that omnibus reform bill.



The EIA had seven main components that affected the operation of schools, each with several specific subparts: 1) raising student performance by increasing academic standards; 2) strengthening the teaching and testing of basic skills; 3) elevating the teaching profession by strengthening the training, evaluation, and compensation of teachers; 4) improving the leadership, management, and fiscal efficiency of schools at all levels; 5) implementing strict quality controls and rewarding productivity; 6) creating more effective partnerships among schools, parents, communities, and businesspeople; and 7) providing school buildings conducive to student learning.

The EIA gave a great deal of authority for developing programs to the state board of education and the state department of education. It directed that committees be established to create a variety of pilot programs for testing in the schools. In several instances, the law was clearly prescriptive. For example, the very first subpart of the EIA legislation mandates that "diplomas issued to graduates of accredited high schools within this State must be uniform in every respect and particularly as to color, size, lettering, and marking." The state board was directed, among other things, to establish minimum standards of conduct and behavior for pupils, regulations governing student absences, criteria for the promotion of students, provisions for compensatory and remedial instruction for students, and criteria and minimum statewide performance standards for evaluating school principals. The state department was to prepare an exit exam that all students would have to pass prior to graduation. The state superintendent was authorized to intervene in school districts that failed to meet minimum criteria. For these and other parts of the EIA, great responsibility was obviously concentrated at the state level.

In other areas, however, the law seemed to provide latitude for local school districts. Districts had some leeway in the design of vocational programs and programs for the gifted and talented. Teachers and schools were given some choice in selecting the specific incentive program under which they would operate. Similarly, inservice training programs related to the effective schools research were mandated for teachers in each district, but the state department allowed districts some choice among available programs. Although teachers were to be observed at least three times in order to be evaluated, no specific evaluation instrument was specified for teachers under continuing contract. And when the state board set up committees to create new programs in various areas, personnel from local districts were often included in the planning.

However, despite the evidence of latitude for educators, many perceived the spirit of the reforms as too prescriptive. This point has been recognized by the state's leading policy makers, including Gov. Carroll Campbell and State Superintendent of Education Charles Williams, both of whom have called for a loosening of state regulations for certain districts.

EDUCATORS' VIEWS OF REFORM

A number of studies and evaluations of various components of the EIA have been conducted. For example, evaluations of the incentive programs for teachers and principals gave educators the opportunity to react to pilot programs before they were fully implemented. The majority of teachers surveyed regarding the Teacher Incentive Program claimed that the program did not encourage improved teaching techniques, that it encouraged unhealthy and distasteful competition among teachers, and that it did not fit their concept of "superior teaching."[6] Similarly, the majority of principals surveyed regarding the Principal Incentive Program claimed that the program was inappropriate for selecting and rewarding top principals, was too time-consuming, and included too many variables over which they had little control.[7] But such dissatisfaction did not lead to major changes when the programs were fully implemented.

While surveys show that South Carolina educators support the *idea* of reform, its *implementation* is troubling to many of them. Simply put, South Carolina educators find that much of the reform movement has created excessive demands on their time, while the benefits of many of the prescriptive requirements they face are not clear. To determine South Carolina educators' key concerns about school reform, the South Carolina Educational Policy Center authorized two studies.

The first study, an evaluation of the state's Principal Evaluation Program, focused exclusively on administrators.[8]

We found solid support for the concept of evaluating principals among the principals, evaluators, superintendents, and heads of school boards in the 14 pilot districts. Yet principals and evaluators raised significant questions about the program – especially about its ability to measure performance and its potential impact on their capacity to perform their jobs properly. This program mandates that all principals perform satisfactorily on 24 performance standards devised by the state. Principals must compile a portfolio of evidence to document their performance.

TABLE 1.

South Carolina Teachers' Views Concerning The Impact of Reforms on Their Working Conditions

	Worse %	No Change %	Better %
Burden of paperwork	84.9	9.5	5.6
Freedom from nonteaching duties	51.3	33.7	15.0
Time to meet with other teachers	47.9	37.3	14.8
Creative freedom in the classroom	39.4	32.2	28.4

The principals we surveyed suggested that many of the performance statements were difficult to document (e.g., managing conflict and displaying sensitivity). They were very concerned about the time required to compile their portfolios, they felt that the program missed the point of their work and could easily be fudged, and they thought that the process made it extremely difficult to separate out various levels of performance.

To the state's credit, the Principal Evaluation Program has been slightly altered. Today, principals must be evaluated only once every three years rather than once a year. This change certainly reduces the amount of time required to document performance. But the inherent problems with the program remain unaddressed, and discussions with principals suggest that they are still quite dissatisfied with it. One reason for the principals' dissatisfaction is that they are trained to pay attention to situational and contingent factors, while the state program uses an evaluation system that takes no account of context in evaluating principals' performance on preset criteria.

The second study focused on the working conditions of teachers, on teacher burnout, and on the impact of reform in South Carolina.[9] Survey data on these topics from more than 4,000 teachers and interview data from more than 100 others were not encouraging for proponents of the reforms.

The teacher study examined a number of issues raised in the Carnegie study, *Report Card on School Reform*. After surveying teachers from all 50 states about their feelings toward various aspects of school reform, the Carnegie study concluded rather pessimistically, "We are troubled that the nation's teachers remain so skeptical. Why is it that teachers, of all people, are demoralized and largely unimpressed by the reform actions taken?"[10]

The findings of the South Carolina teacher study were even more discouraging than those presented in the Carnegie report. Table 1 shows findings from the South Carolina study on selected questions that were also asked in the Carnegie study.

There were several areas in which South Carolina teachers did report improvements as a result of the reform effort (e.g., inservice education, leadership of principals), but the large majority of responses suggest that teachers in South Carolina are discontented with many aspects of the reforms. Indeed, while the Carnegie study found that 49% of teachers believe that morale is worse as a result of reform, the corresponding figure for South Carolina was 60.3%. Moreover, these data – which represent a much larger sample of South Carolina teachers than was polled in the Carnegie study – are significantly more negative than the data from South Carolina teachers surveyed by the Carnegie group.

Other responses from the South Carolina study are equally disturbing. Using questions from the Role Conflict/Role Ambiguity Questionnaire,[11] we found that nearly 70% of South Carolina teachers said that, as a result of the reforms, they must handle certain things differently from the way they believe these things should be handled; about 68% said that they have to work on unnecessary tasks; and nearly 49% reported that they work with two or more groups that operate quite differently. Interestingly, the teachers reported no problems with role ambiguity. For example, nearly 80% said that they know exactly what their responsibilities are. While being clear about one's role is a good thing, the positive responses in this area probably relate to the highly prescriptive nature of many of the reforms in South Carolina: teachers are being told what to do and how to do it.

Part of our research effort was geared to studying burnout among teachers. We used the Maslach Burnout Inventory (MBI), a copyrighted and highly respected instrument widely used with those in helping professions.[12] The MBI has three subscales related to the burnout syndrome. A burned-out individual has high levels of depersonalization (unfeeling responses toward recipients of one's service), low levels of personal accomplishment (feelings of competence and achievement), and high levels of emotional exhaustion (feelings of being overextended and exhausted by work). South Carolina teachers reported average feelings of depersonalization and personal accomplishment. They still have positive feelings about their students, and they still possess some sense of work-related efficacy. In terms of emotional exhaustion, however, the teachers' responses were alarming.

The MBI norms on the emotional exhaustion subscale indicate that a score of 21.25 for teachers is average. The South Carolina teachers' average score was 30.13, about 50% higher than the national average. By combining response categories on the MBI, a simple picture of how South Carolina teachers feel about their work can be drawn. More than 81% of the teachers often feel used up at the end of the day; more than 71% often feel emotionally drained by their work; nearly 60% often feel that they work too hard on the job; and nearly 58% often feel fatigued when they get up in the morning and must face another day on the job[13].

These reported feelings of emotional exhaustion spanned almost every demographic category. High emotional exhaustion scores (27 or above on the MBI) were found for teachers of both sexes – from all types of schools, all locales, all school sizes, all levels of educational training (except those with *less* than a bachelor's degree), and all areas of teaching. Scores for black teachers, for the very youngest teachers, and for the very oldest teachers were slightly below the level characterized by the MBI as high. But the overall picture is one of a very tired teaching force.

We probed teachers' feelings about working conditions and burnout even further in individual interviews. The teachers seem devastated by the impact of curriculum mandates, testing, paperwork, and evaluation – all artifacts of South Carolina's education reform legislation. "We teach to the test now, but there are so many things we are leaving out," said one teacher. "It seems like we don't care about children anymore," another offered. "We just want passing scores. . . . The tests make a lot of teachers lie." A third teacher said, "I am being made into a machine, and my students are being made into machines. I guess I went to college to become a file clerk. Sometimes I know I am pushing things down their throats, just like pumping gasoline."

Obviously, a great deal of frustration exists among South Carolina teachers. One can only guess how much longer they will be able to cope with all these demands before students are affected negatively by the state's stressed-out teacher work force. We did ask teachers to speculate on how long they planned to stay in the profession. Of the more than 4,000 surveyed, 27.2% said that they planned to leave teaching prior to retirement. We find that large percentage very troubling.

UNDERSTANDING the impact of reform on educators is of central importance in judging the merits of a reform package. South Carolina has made a great deal of progress in certain areas as a result of its reform movement. But the negative feelings reported by teachers and principals are a disturbing outcome of education reform. Most recently, improvements in such indicators as test scores have begun to level off in South Carolina. Could it be that the initial momentum of the reform movement is beginning to run down? Could teachers' feelings of frustration be starting to take their toll?

Given our findings about teachers' and principals' perceptions of various aspects of school reform, we agree with Timar and Kirp that several key questions concerning the overall impact of the reform movement must be answered. Specifically, Timar and Kirp suggest three questions that are important for policy makers and educators to ask in evaluating reform: What differences have the reforms made in the daily operation of schools? Are schools more competent organizationally than they were five years ago? What have we learned from five years of intensive reform activity?

> **The negative feelings reported by teachers and principals are a disturbing outcome of education reform.**

What differences have the reforms made in the daily operation of schools? South Carolina schools are probably more "on task" today than ever before, and great efforts have been made to improve student performance. But the teachers are tired and frustrated, and they feel that much of the joy of teaching is gone. Principals report similar feelings. The reforms have made schools in South Carolina much more rigid and demanding places in which to work.

Have reforms made schools more competent organizationally than they were five years ago? The answer here is probably yes and no. In some ways schools are more competent. But the price that has been paid appears to be rather high. The value of many of the reforms must be questioned; we must weigh the costs against the benefits. Do we really want exhausted teachers in our schools? Can emotionally exhausted teachers and principals provide the energy, wisdom, and spirit needed to continue with the reforms and develop organizationally mature schools? Is the organizational culture that exists in South Carolina schools today really what we want for our teachers and principals? We think some effort to deal with teachers' and principals' concerns about working conditions is essential.

What have we learned from five years of reform activity? In South Carolina, we have learned that great interest and a good deal of money can make a difference. But we have also learned that we should begin to listen to the teachers and principals, those closest to the students. Certainly, if the situation in South Carolina goes unresolved, if the pleas of teachers and principals are ignored, then the early gains may ultimately be lost.

Analyzing school reform is a tricky business. There is so much difference from one state to the next that comparisons are dicey. South Carolina has taken up school reform with a vengeance, and in many respects reform has been good for the schools. But some attention must now be paid to the key issues being raised by educators. To ignore the reality faced every day by principals, teachers, and students does them all a great disservice. If what is happening in South Carolina is happening elsewhere, then education policy makers across the country should heed the advice of those in their employ and turn their attention to improving the culture and working conditions that school reform has created.

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1. See, for example, William Chance, *The Best of Education: Reforming America's Public Schools in the 1980s* (Chicago: John D. and Catherine T. MacArthur Foundation, 1986); and Deborah Inman, "The Financial Impact of Educational Reform," paper presented at the annual meeting of the American Educational Research Association, Washington, D.C., 1987.
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11. John R. Rizzo, Robert J. House, and Sidney I. Lirtzman, "Role Conflict and Ambiguity in Complex Organizations," *Administrative Science Quarterly*, vol. 15, 1970, pp. 150-64.
12. Christina Maslach and Susan E. Jackson, *Maslach Burnout Inventory Manual* (Palo Alto, Calif.: Consulting Psychologists Press, 1986).
13. Data are derived from Ginsberg et al., pp. 57-62.

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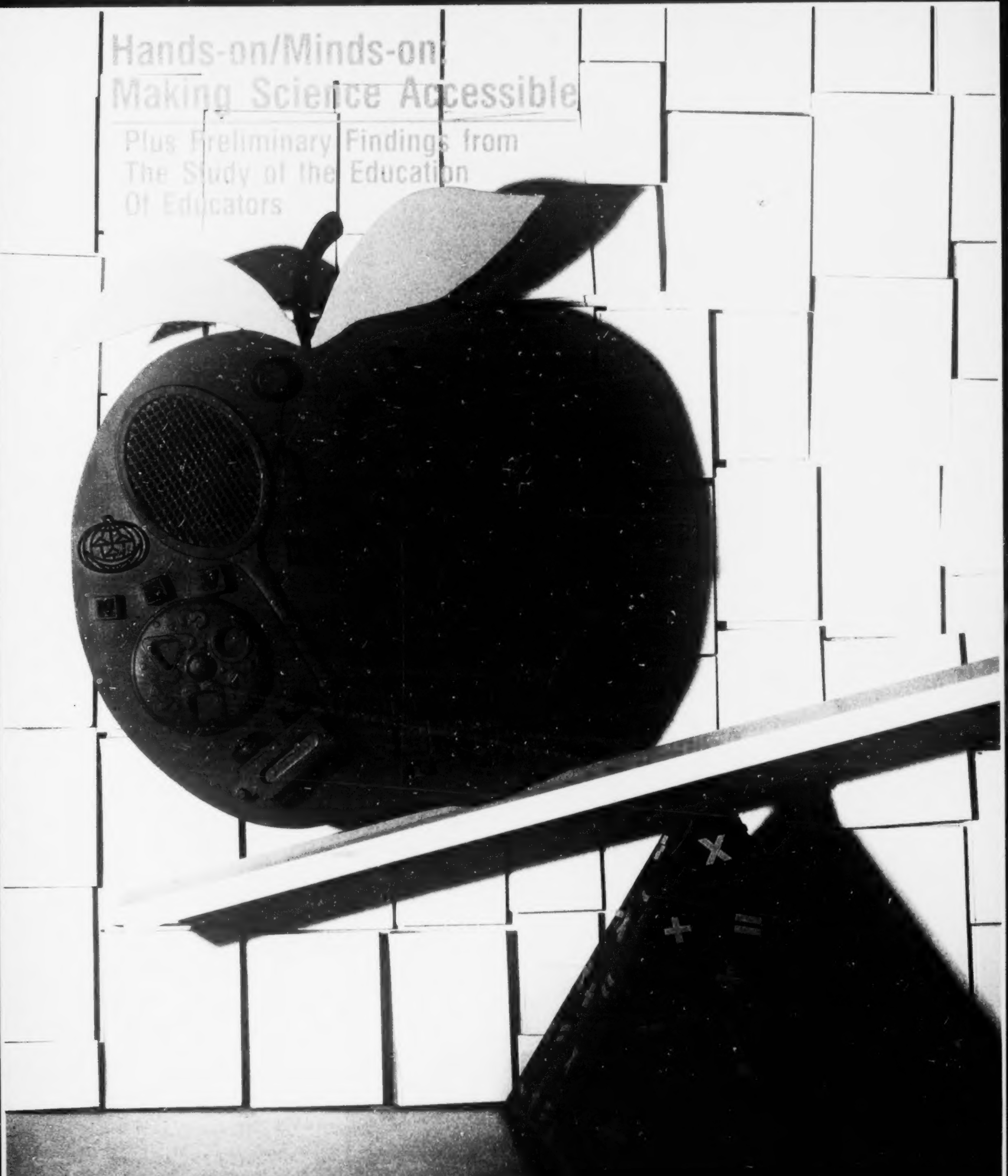

Hands-on/Minds-on: Making Science Accessible

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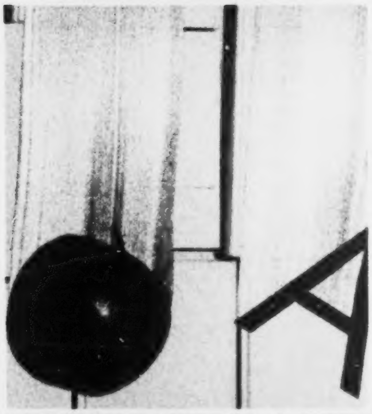

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THE EDITOR'S PAGE

Two Gifts for the Governors

As I WRITE these words, my daughters, aged 5 and 8, are at a planetarium in Indianapolis, and I've just finished reading *Education Week*'s coverage of the governors' proposed goals for education. All the governors' goals are ambitious; a few are wise; some are vague; at least one is downright misguided. This last one states that U.S. students will be "first in the world in mathematics and science achievement" by the year 2000.

This goal and several of the others have already come in for a dollop or two of criticism from educators. And despite a natural bent toward cynicism, I agree with Ernest Boyer that the worst thing educators can do is to "dismiss" the goals or become "cynical" about them. What's more, I'm cheered by the governors' recognition that real improvement in science education will take time – at least a decade by their reckoning.

So in the spirit of cooperation, I'd like to offer the governors and other policy makers two gifts: a *Kappan* special section on science education that is a real winner and a new agenda to replace their chant of "we're (gonna be) number one."

First, the special section. Deborah Fort leads off with an unusual perspective on gifts and talents in science; she concludes that *everyone* needs to experience a rich and lively curriculum in science so that "gifts" can be identified and developed into "talents." Iris Rotberg reminds readers that a great many such gifts are withering by the wayside because few minority students are being given access to the rich and inviting curriculum that Fort prescribes.

Then Bruce Watson and Richard Konicek take readers to a classroom in which a teacher chooses to teach science for conceptual change. The approach is time-consuming, and the fourth-graders find it discomforting at first. But when you've finished this tale of young scientists at work, you will never look at a warm scarf in the same way again. Next, Yvonne Estes reports on an 18-month program to improve elementary science instruction that involves practicing teachers, university-based science educators, and groups of elementary students from a range of socioeconomic backgrounds. Finally, Richard Shavelson, Neil Carey, and Noreen Webb take a hard look at typical measures of achievement in science and suggest some better ways to assess science learning.

Which brings me back to the "first in science achievement" goal. Presumably, the governors' goal is a response to the disappointing performance of U.S. students on international assessments. Certainly, their concern reflects our national fascination with test scores. But trying to improve performance on such measures is akin to putting the thermometer in the freezer so that we won't feel hot this summer. It's the weather that matters, not the height of the column of mercury. If U.S. students improved significantly on these tests – even if they made it to the top – what would be gained? Would we then be a nation of scientific literates? Would our students have formed the habits of mind that thinking like a scientist requires? Don't you believe it!

And that brings me to my second gift to the governors: a gift designed to help change the weather, not just the thermometer reading. All of the topics addressed by the authors in this month's special section can be found in *Science for All Americans*, a February 1989 publication of Project 2061 of the American Association for the Advancement of Science. My recommendation is simple: that the governors replace their misguided goal with the "Agenda for Action" that begins on page 162 of *Science for All Americans*.

By the way, my younger daughter informs me that you can't land a spacecraft on Neptune, because it's just a huge ball of gas. My older daughter asks, Why doesn't it just blow away? – BMS

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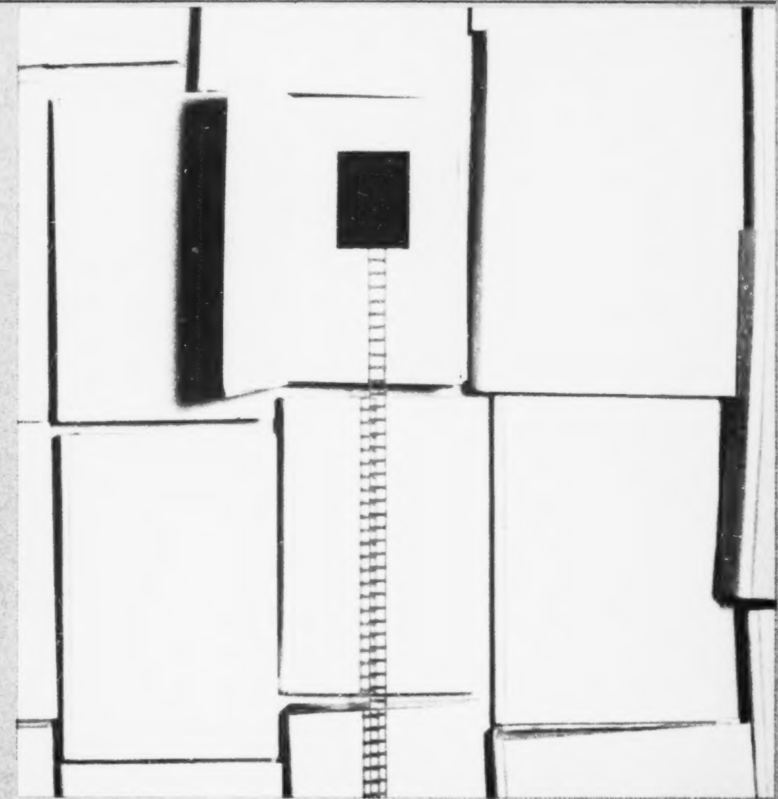
Resources and Reality: The Participation of Minorities In Science and Engineering Education

Negative trends with respect to financial resources and institutional priorities, which affect the entire student population, are particularly troublesome for minorities, Ms. Rotberg notes – and especially for those who are interested in entering science and engineering.

BY IRIS C. ROTBERG



THERE IS general agreement about the importance of increasing the participation of underrepresented minorities in undergraduate and graduate education in science and engineering. There is less agreement, however, about the commitment – public and private – to provide the resources and policy initiatives that will significantly improve the rate of minority participation. While the number of minority students in some fields of science and engineering has grown more over the past generation than most commentators have acknowledged, their underrepresentation remains a serious problem.

At first glance, there seem to be a great many programs across the country that are designed to provide academic or financial support to encourage increased minority participation in science and engineering. Some of these programs have shown impressive results. However, even the most effective "special" programs can serve only a relatively small number of students. The issue is whether these programs alone can create significant increases nationwide in the number of minority students enrolled in courses in science and engineering.

The fact is that even these highly commendable programs are in danger of being overshadowed by more general, negative trends with respect to institutional priorities and available financial resources. Moreover, these negative trends affect large numbers of potential students, and they create unintended barriers to increased participation. Although the effects of these trends are not limited to science and engineering or to minority students, they are especially troublesome in these areas.

The following are the major trends that affect minority students seeking to obtain

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Illustration by Joe LeMonnier

an education in science or engineering.

- The growing financial pressures on colleges and universities have increased tuition far faster than inflation. The decline in the real value of financial aid, combined with increased reliance on loans, has exacerbated the problem. Many minority youths have chosen not to enroll in higher education at all; others have chosen lower-quality institutions. Students considering graduate school face a long-term decline in federally funded fellowships and traineeships; at the same time many have already assumed a large debt burden from their undergraduate education.
- Financial considerations have contributed to an increasing polarization of the college population in different types of institutions. Few students can afford expensive colleges, and many elite institutions are under substantial financial pressure to select increasing proportions of high-income students. As a result, many of the colleges that have the strongest undergraduate programs – indeed, those with the environment that the special programs noted above attempt to replicate – are growing less accessible to low-income students. This polarization is compounded by the fact that low-income and minority students are increasingly attending community colleges, at least in part because of costs. Only a small proportion of low-income and minority students who attend community colleges go on to receive bachelor's degrees.
- There has been a long-term trend for colleges and universities to give lower priority to undergraduate teaching and greater attention to research and a range of other priorities. At the same time, research evidence suggests that the institutional environment, especially the time that faculty members spend with students, can make a major difference in minority students' achievement and retention in science and engineering programs.

These trends affect both the access of minority students to science and engineering education and their decisions about majoring in science and engineering and attending graduate school. Indeed, any changes in access and retention can make a noticeable difference in a relatively short period of time. A recent report from the Office of Technology Assessment put it this way:

> If the nation wants more scientists and engineers relatively quickly, then retaining college and graduate students in science and engineering is the most useful policy strategy. Many able students leave science during college, after earning baccalaureate degrees, and during graduate school. Only about 30% of baccalaureate science and engineering graduates enter full-time graduate study, and nearly half of science and engineering doctoral candidates never earn Ph.D.s. Some loss is inevitable and, indeed, beneficial to other fields, but those who leave unwillingly and prematurely are a rich resource that could be tapped. Because attrition rates are so high and the population of research scientists and engineers is relatively small (only 4% of American workers), slight improvements in retention could increase significantly the number of scientists and engineers in the work force.[1]

This article considers, first, the recent trends in minority enrollment in science and engineering education and presents some examples of programs that have shown gains. And second, it analyzes the policies and priorities that appear to hinder continued progress in increasing the enrollment of minorities in science and engineering programs.

TRENDS IN MINORITY ENROLLMENT

Societal and economic changes in recent decades have led to significant gains in the participation rates of minorities in some fields of science and engineering education. Many of these gains have occurred in less than a single generation. While the number of minorities in science and engineering fields remains small and while some trends are disturbing (e.g., the declining college attendance rates among minorities), most indicators suggest that the potential exists for significant future increases in minority participation. However, the environment is fragile, and public and private policies with respect to institutional priorities and financial aid can play an important role in encouraging – or blocking – future gains.

UNDERGRADUATE EDUCATION

Between 1977 and 1987, even though overall college participation rates lagged, the number of minorities who received bachelor's degrees in several key science and engineering fields increased, both in absolute numbers and as a percentage of the total degrees awarded in these fields (see Table 1).[2] The largest gains were in

TABLE 1.

Recipients of Bachelor's Degrees in Science and Engineering By Field and Racial/Ethnic Group: 1977 and 1987

Field	Total, U.S. Citizens And Permanent Residents		White		Black		Asian		Native American		Hispanic	
	1977	1987	1977	1987	1977	1987	1977	1987	1977	1987	1977	1987
Physical sciences	22,038	19,027	20,417	16,653	692	823	377	894	68	72	484	585
Mathematical sciences	13,977	15,506	12,602	13,265	712	834	316	1,034	26	52	321	321
Computer sciences	6,161	35,943	5,508	29,181	361	2,820	163	2,455	15	112	114	1,375
Life sciences	131,430	101,085	119,442	86,858	5,860	5,251	2,578	4,107	424	420	3,126	4,449
Psychology	47,297	41,248	41,494	35,761	3,221	2,451	807	1,154	167	180	1,608	1,702
Social sciences	116,622	91,347	100,191	78,940	10,360	5,746	1,664	2,853	474	449	3,933	3,359
Engineering	46,093	85,134	42,072	71,866	1,385	3,420	1,211	6,378	135	283	1,290	3,187

Source: *Women and Minorities in Science and Engineering* (Washington, D.C.: National Science Foundation, January 1990), pp. 136-37.

TABLE 2.

Recipients of Master's Degrees in Science and Engineering By Field and Racial/Ethnic Group: 1977 and 1987

Field	Total, U.S. Citizens And Permanent Residents		White		Black		Asian		Native American		Hispanic	
	1977	1987	1977	1987	1977	1987	1977	1987	1977	1987	1977	1987
Physical sciences	4,689	4,271	4,363	3,834	94	79	142	227	21	9	69	122
Mathematical sciences	3,328	2,331	3,048	2,012	133	73	90	183	12	3	45	60
Computer sciences	2,432	5,848	2,208	4,717	67	207	103	779	3	22	46	123
Life sciences	22,327	20,961	20,262	18,687	914	888	595	663	72	68	484	655
Psychology	8,149	7,493	7,201	6,698	506	376	95	113	26	35	321	271
Social sciences	14,013	7,867	12,364	6,979	969	390	275	234	36	22	369	242
Engineering	12,695	15,947	11,444	13,239	240	433	737	1,692	23	63	251	520

Source: *Women and Minorities in Science and Engineering* (Washington, D.C.: National Science Foundation, January 1990), pp. 144-45.

engineering and computer science, but small gains also occurred in the physical and mathematical sciences. Degree patterns for minorities generally follow those of the student body as a whole. Thus there has been a trend toward engineering and computer science and away from life sciences, psychology, and the social sciences, which is consistent with overall patterns for the entire population.

A recent report by the National Action Council of Minorities in Engineering shows that the rate of increase of minority enrollments in undergraduate engineering programs continues to outstrip the rate of increase for the student population as a whole. In 1988, 11,754 black, Hispanic, and Native American students enrolled in undergraduate engineering programs, up from 10,325 students in 1987 for an increase of 13.8%. The corresponding increase for the total freshman population in engineering was only 2.7%.[3]

GRADUATE EDUCATION

The trends for minority students in graduate schools are consistent with those for the student population as a whole: minority students generally earned more graduate degrees in engineering and computer science in the late 1980s than they did 10 years earlier, and they earned fewer graduate degrees in several other scientific fields (see Tables 2 and 3).[4]

In the case of minorities, however, the numbers were so small to begin with that percentage increases do little to alleviate the basic problem. For example, the increase in engineering doctorates between 1978 and 1988 meant that blacks went from 13 engineering doctorates in 1978 to 31 in 1988; Native Americans, from two to four; and Hispanics, from 32 to 63. For other fields, such as mathematics, the extremely small number of doctorates awarded to minorities in previous years has now been reduced even further. However, recent reports about increased graduate enrollments in these fields are encouraging. For instance, about 600 more black U.S. citizens enrolled in science and engineering programs in doctorate-granting institutions in 1988 than in 1987.[5] The gains were spread over all fields except mathematics, which continued to exhibit a decline. Nonetheless, the societal trends that have discouraged U.S. students from pursuing doctoral degrees – cost, length of time to earn a doctorate, competing job opportunities – will be especially damaging to minorities and to the society as a whole, if there continue to be only very small numbers of minority professionals in science and engineering to serve as mentors or role models.

INDICATORS OF FUTURE GROWTH

However, there are indications that the student pool from which many science and engineering majors are drawn will grow. Given the high correlations between such indicators as parental education, family income, and achievement, the continued growth in the number of middle-class minority families could be expected to exert strong intergenerational effects on the educational attainment of minority children as a group. Indeed, as a result of the major increases in college attendance for minority groups during the 1970s, the children of these college students could be an important source of enrollments in science and engineering programs during the next two decades. While the number of potential science and engineering students will certainly increase, the reality is that institutional priorities and public policies with respect to financial aid will influence how many of these students actually choose to enter and remain in science and engineering.

One indicator of the gains that have already been made is the significant improvement in the test scores of minority students on a range of tests, including the National Assessment of Educational Progress (NAEP), the Scholastic Aptitude Test (SAT), the American College Testing (ACT) Program, and the Graduate Record Examination (GRE).[6] Increased scores have occurred at all age levels, both in absolute terms and relative to the test scores of whites. Despite the continuing gap, the overall trend for minorities is clearly upward. It must be noted that the comparisons do not control for family income and level of parental education – two variables that are highly correlated with test scores and that are substantially lower for minority groups than for the population as a whole. For instance, in 1985, 68% of blacks who took the SAT came from families with annual incomes of less than $24,000, while only 27% of whites came from families with annual incomes at that level. Thirty-four percent of the black students came from families with annual incomes of less than $12,000.[7]

It is likely that a number of factors have contributed to these achievement gains – including the emphasis over the past 20 years on supplemental academic programs for disadvantaged children. Nonetheless, the increasing proportion of minority children growing up in middle-income families has clearly played a role, even though this proportion remains small compared to the middle-class population as a whole.

SOME SUCCESSFUL PROGRAMS

Some programs that provide academic support to encourage minorities to enter or to continue in science and engineering have shown positive results. These programs are sponsored at precollege, undergraduate, and graduate levels by government and by the private sector. Virtually none have been formally evaluated. Nonetheless, the statistics from a few of the programs, along with anecdotal evidence from a number of others, suggest that the programs can serve an important purpose. However, they are not likely, by themselves, to result in major shifts in the rates of participation by minorities in science and engineering. They provide on-site support and cannot be expected to compensate for broader policies that affect much larger numbers of students.

A full description of the wide range of these programs is beyond the scope of this article. However, as examples of the potential benefits, I note two programs that have achieved especially dramatic results.

Philip Treisman's program at the University of California, Berkeley, which has been replicated at a number of other institutions nationwide, has received widespread publicity.[8] The program uses a cooperative-learning workshop model to teach calculus, a course that has traditionally presented a major barrier to the retention of students in science and engineering programs. The workshop participants earn an average grade that is essentially the same as that earned by all students enrolled in calculus. In some years the workshop participants exceeded the course average. Furthermore, they typically earn between three-quarters of a grade and a full grade higher than other minority students in comparison groups who have similar SAT math scores. Indeed, the average grade (2.2) of workshop participants with the *lowest* SAT scores (200-460) is higher than the average grade (2.0) of nonparticipating minority students with the *highest* SAT scores (550-800). Retention rates are also considerably higher for the workshop participants than for comparison groups. For example, 44% of the black students who took part in the workshops graduated from Berkeley in math-based majors, compared to 10% of the black students who did not participate in the workshops.

Raymond Landis of California State University, Los Angeles, has developed a similar program for engineering students.[9] The program emphasizes cooperative learning and community building and has also produced dramatic gains in student learning and retention in engineering. Not only are the retention rates for minority freshmen who participated in the Minority Engineering Program (MEP) higher than those of minority students who were not in the MEP, but they are also higher than those of the student body as a whole.

FINANCIAL RESOURCES AND INSTITUTIONAL PRIORITIES

The priorities set by government and by institutions of higher education have important effects on the access of minorities to science and engineering education. While these decisions affect the student population as a whole, minorities are particularly vulnerable to changes in public policies or institutional priorities. Indeed, three interrelated factors affect student participation and retention in science and engineering education: 1) the costs of attending college and graduate school, 2) the polarization of higher education, and 3) the choices that colleges and universities make with respect to allocation of their own resources, both financial and human.

COSTS: UNDERGRADUATE

Financial considerations play a crucial role in the size of minority enrollments in undergraduate education, and they can in turn be expected to affect rates of entrance to and retention in science and engineering programs. Indeed, there has been a recent decline in total college participation rates among minority young people.[10] Between 1976 and 1988, the participation rate for low-income black high school graduates dropped from 39.8% to 30.3%, while the rate for middle-income black students declined from

TABLE 3.

Recipients of Doctorates in Science and Engineering By Field and Racial/Ethnic Group: 1978 and 1988

Field	Total, U.S. Citizens And Permanent Residents		White		Black		Asian		Native American		Hispanic	
	1978	1988	1978	1988	1978	1988	1978	1988	1978	1988	1978	1988
Physical sciences	2,161	2,231	1,750	1,922	37	33	179	137	4	6	20	62
Mathematical sciences	666	384	563	331	13	3	43	33	1	2	5	4
Computer sciences	90	326	77	265	0	2	4	44	0	1	0	2
Earth, atmospheric, and marine sciences	540	537	466	495	4	3	25	15	0	2	5	8
Life sciences	3,707	3,920	3,188	3,472	66	68	188	200	7	12	39	97
Psychology	2,858	2,700	2,524	2,421	100	100	28	47	3	7	51	93
Social sciences	2,448	1,700	2,076	1,436	76	66	87	90	4	9	47	57
Engineering	1,586	2,144	1,169	1,651	13	31	272	332	2	4	32	63

Source: *Women and Minorities in Science and Engineering* (Washington, D.C.: National Science Foundation, January 1990), pp. 151-54.

Along with decreases in the real value of student grants, there has been a shift in emphasis from grants to loans.

52.7% to 36.2%. The corresponding declines for low-income Hispanic students were from 50.4% to 35.3% – and for middle-income Hispanic students, from 53.4% to 46.4%.

Although the number of minority students receiving bachelor's degrees in engineering and computer science has increased, the overall trends in college participation rates could have serious implications for any future gains in science and engineering fields. It is counterintuitive to expect that the declining participation of minorities in undergraduate education will be "compensated for" by increased rates of enrollment in science and engineering. It is more likely that the overall trend will soon be reflected in declining undergraduate and graduate enrollments of minorities in science and engineering.

There are a number of reasons for the low undergraduate participation rates of minorities. Clearly, many minority youths come from low-income families, grew up in high-crime areas, and attended poor schools.[11] Nonetheless, a major factor contributing to the overall decline is the increasing cost of higher education, which threatens minority representation in all fields, but especially in science and engineering.

Tuition costs have outpaced inflation. There have been decreases in the real value of student financial aid as government grants have declined as a percentage of the total cost of education.[12] These trends, which affect educational choices for low- and middle-income students, have had unintended consequences for minority enrollment in higher education. These are the very groups whose real after-tax income has declined or failed to keep pace with the gains posted by those in higher-income groups. Moreover, colleges increasingly set their tuition rates based on the applications of upper-middle and high-income students, whose families have had recent and substantial after-tax benefits. Under these circumstances, many minority youths cannot attend college at all. Others may choose lower-cost colleges or two-year rather than four-year colleges. And many minority youths do not have an opportunity to attend many of the institutions that specialize in science and engineering education.

A recent study by the National Academy of Sciences concluded that the reduction in the real value of financial aid was the major factor contributing to the decline in college enrollments for blacks after the large upswing in enrollments in the 1970s, which was fueled in part by increases in financial aid. The enrollment decline has occurred even though high school graduation rates and average test scores for minority students have risen.[13] This study also noted that increases in military enlistments might have contributed to an enrollment decline (which has been especially severe for black men), but it concluded that possible interactions between military enlistment and college enrollment decisions are not clear.

Under the circumstances, the enrollment decline among minorities is not surprising. It is estimated that almost one-third of low-income students of all racial and ethnic groups would drop out of school if grants were eliminated.[14] Indeed, a recent study found that students were taking longer to complete their undergraduate degrees – or were dropping out – in part because they could not afford to meet their college expenses.[15] While minorities had the lowest college completion rates, the study found lower dropout rates for students who received grants. Ninety-three percent of both whites and blacks who received grants to attend private colleges were still enrolled after their first year, compared with 77% of white students and 66% of black students who received no grants.

Along with decreases in the real value of student grants, there has been a shift in emphasis from grants to loans. In 1985 almost half of all federal student aid was in the form of loans, up from only 17% in 1975. As one analyst put it, "In a single decade, loan programs intended originally for the convenience of the middle class have become the major funding mechanism helping needy students gain access to college. Recent estimates show that half of all undergraduates will finish their college careers with some debt."[16]

The increased reliance on loans has been especially troublesome for minorities. Understandably, debt burdens have been found to have a greater impact on the college attendance rates of minorities than on those of whites because of the continued discrepancies between minorities and whites in expected earnings and because of the large differences in the income and wealth of their families.[17]

COSTS: GRADUATE

It is not surprising that graduate school enrollments for U.S. citizens in some fields of science and engineering have been relatively low. For instance, there is little financial incentive for young engineers, who are paid well by industry, to enroll in costly doctoral programs and to accept lower-paid positions in universities.[18] Graduate programs in science and engineering have also felt increased competition in recent years from such fields as business and law.

The relatively long time required to obtain a doctorate in some fields of science and engineering results in unnecessary costs and delays the entrance of students into the science and engineering workforce.[19] The time needed to earn a doctorate serves as a disincentive to students who might otherwise choose science and engineering, attend graduate school, and complete a doctorate. The average time for completing a doctorate in all fields is about 6.9 years, up from 5.5 years in the 1960s. Engineering doctorates at 5.8 years and doctorates in the physical sciences at 6.0 years, while below the average for all doctorates, clearly entail an investment of time and money that many potential graduate students do not find productive.

In addition, reductions in federal support for graduate fellowships and traineeships during the past 20 years have contributed to lower enrollments in science and engineering among U.S. students.[20] However, the reductions in fellowships and traineeships have been partially offset by increases in federally supported research assistantships and by federal fellowship programs for minority students, e.g., the National Science Foundation's

Minority Graduate Fellowships Program.

The lower average family income and lower expected earnings of minorities make it especially difficult for them to consider graduate school. Under the circumstances, the size of the debt incurred during undergraduate school is more likely to deter minority students from attending graduate school than to deter the general student population.[21]

Minority students are also less likely to receive research assistantships, which – in addition to the financial implications – means that they are less likely to gain the experience of being part of a research group that might encourage them to continue in science and engineering fields and to serve as faculty role models and mentors for the next generation of students.[22] Table 4 shows the serious underrepresentation of minority doctoral faculty members in four-year colleges and universities.

THE POLARIZATION OF HIGHER EDUCATION

Along with financial pressures for students to choose less expensive institutions, colleges and universities also have pressures to choose students who can afford to pay. Many institutions actively recruit minority students who are "superstars," but well-qualified students from families just entering the middle class may be eligible neither for recruitment nor for financial aid. Indeed, changes in eligibility requirements mean that large numbers of middle-income families are no longer eligible for federal grants.[23] For instance, in 1980 families with incomes under $32,500 in 1980 dollars were eligible for Pell grants. In 1986 that $32,500 income would have been worth just over $41,000 in 1986 dollars, yet the ceiling for eligibility for Pell grants was reduced to $28,500. The irony is that, as more minorities enter the middle class, they are being squeezed from two directions, as financial aid packages disappear and as colleges and universities seek increasing numbers of students from quite affluent families.

A study by Lionel Lewis and Paul Kingston documents the fact that the increasing cost of higher education in the 1980s has increased the homogeneity of the student body in highly selective private institutions.[24] Although the student body remains more diverse than it was 20 years ago, these institutions are enrolling an increasing proportion of high-income students. Between 1980 and 1986 the proportion of students with family incomes above $100,000 increased from 10% to 25% – a large increase in a few years that is only partially explained by inflation or real growth in family income.

The proportion of middle-income students (defined as students from families with annual incomes between $35,000 and $49,999) enrolled in highly selective institutions is small; that proportion fell from 4.5% in 1980 to 2.5% in 1986, again a reduction only partially accounted for by inflation. As that trend continues, minority students from low- and middle-income families will find it increasingly difficult to afford to attend many of the institutions that have been especially effective in encouraging students' interest in science and engineering.

Lewis and Kingston conclude:

> Although the evidence that middle-income students have "traded down" because of a new inability to pay for an expensive selective college or university is still mostly anecdotal, public encouragement for increasing opportunities for the less economically privileged at these institutions appears to have waned. . . . Little suggests that as matters now stand the public interest is being served.[25]

At the same time that the highly selective institutions are enrolling a larger proportion of high-income students, the low-income and minority students are increasingly attending community colleges. While some states have developed "articulation" programs between two- and four-year colleges, the overall proportion of community college students who obtain bachelor's degrees has been decreasing.[26] It is estimated that only 10% to 15% of all community college students and only 20% to 25% of those who intend to transfer to a four-year institution actually go on to receive bachelor's degrees. Moreover, black, Hispanic, and Native American students are less likely to transfer than are white or Asian-American students.

The issue is not whether community colleges serve an important function. Clearly, many students are helped to make the transition to four-year colleges, and many others receive vocational/technical training that would otherwise not be available. The concern is for the students who attend community colleges only be-

TABLE 4.

Doctoral Scientists and Engineers on the Faculties of Four-Year Colleges and Universities, by Field and Racial/Ethnic Group: 1987

Field	Total*	White	Black	Asian	Native American	Hispanic
Physical sciences	28,700	25,700	300	2,600	100	500
Mathematical sciences	13,000	11,600	100	1,200	**	200
Computer sciences	5,400	4,900	**	500	**	100
Environmental sciences	7,400	6,900	100	400	**	100
Life sciences	64,700	58,200	1,000	5,000	100	1,000
Psychology	22,000	20,700	600	400	**	300
Social sciences	44,400	40,200	1,300	2,400	100	800
Engineering	23,600	19,600	300	3,600	**	400

Source: *Women and Minorities in Science and Engineering* (Washington, D.C.: National Science Foundation, January 1990), pp. 107-8.

*Rows do not add to total because racial/ethnic categories are not mutually exclusive and because total includes "other" and "no report."

**Too few cases to estimate.

cause of financial considerations and who therefore have significantly reduced their chances of obtaining a degree in science or engineering.

A recent study concludes that the net effect of community colleges has been to increase the separation of elite and nonelite institutions in the U.S. and of the students who attend them:

> The very real contribution that the community college has made to the expansion of opportunities for some individuals does not, however, mean that its aggregate effect has been a democratizing one. On the contrary, the two-year institution has accentuated rather than reduced existing patterns of social inequality. Indeed, in both the social origins and the occupational destinations of its students, the community college clearly constitutes the bottom tier of a class-linked tracking system in higher education. As a growing body of evidence accumulated over more than two decades demonstrates, the very fact of attending a two-year rather than a four-year institution lowers the likelihood that a student will obtain a bachelor's degree. Similarly, entering a two-year as opposed to a four-year college has a negative effect on adult occupational status, even controlling for individual differences in socioeconomic background, measured mental ability, and other variables.
>
> To be sure, the growth of community colleges has brought some individuals into higher education who would otherwise never have attended college; at the same time, however, this growth has also meant a diversion to the two-year sector of large numbers of students – disproportionately of modest social backgrounds – who would otherwise have attended four-year institutions. Finally, a fundamental (and by no means entirely unintended) effect of the rapid extension of community colleges has been to enable public four-year colleges and universities to tighten their admissions requirements and thereby to exclude on meritocratic grounds many students who, in the absence of community colleges, might have felt entitled to a place in the freshman class of what are, after all, public institutions.[27]

INSTITUTIONAL CHOICES

The decisions an institution makes about tradeoffs between such competing priorities as research, undergraduate teaching, programs abroad, and the renovation of aging facilities affect costs as well as students' educational experiences. These experiences in turn can be expected to influence academic achievement, persistence in science and engineering programs, and occupational and graduate school choices.

There is a growing body of evidence that the undergraduate environment of colleges and universities, especially the time faculty members spend teaching and advising students, plays an important role in student achievement and retention in science and engineering programs.[28] Mentoring by faculty members has been found to be an important factor in keeping minority students in science and engineering fields. Indeed, one purpose of the minority science and engineering programs described above is to create a supportive environment for students within the current structure of colleges and universities.

The financial pressures and the emphasis on research have driven many institutions away from a focus on undergraduate education. Faculty members often have little time for teaching and mentoring undergraduate students or for involving them in research. Freshman and sophomore science and engineering courses, which are most likely to influence students' decisions about continuing in these fields, are increasingly taught in large classes or by graduate assistants. As one faculty member put it, "Students are the weeds in the garden of academia."

Stephen Joel Trachtenberg, president of George Washington University, describes the disincentives for undergraduate teaching and their impact on the costs of higher education:

> [W]hat the American public itself has done is to lay down the rule that the pacesetters in higher education are the world-class *research* universities where the rules are that the higher you rank as a faculty member the less you teach; and that the more you charge as a school the better you are. . . .
>
> [T]he nationally established pecking order for the universities you'd like your son or daughter to attend has also resulted in a pecking order that prevails *within* those universities. With very occasional exceptions, the more a faculty member is exposed to students and to classroom teaching, the lower that faculty member's standing within his or her academic peer group.
>
> Among those faculty members who do, unfortunately, have to teach in order to receive their paychecks, additional hierarchical distinctions prevail. Those who teach graduate students and an undergraduate senior-level honors seminar rank higher than those who teach *only* junior- and senior-level undergraduates. The latter, in turn, rank higher than those who teach sophomore-level introductory courses in their academic specialties. And those poor souls, in turn, occupy an Olympus that towers far above the plains of drudgery where teaching assistants hand out the basics on how to write decent English and how to understand the cultural and historical foundations of our society.
>
> For faculty members who have internalized these standards, getting released time from teaching and teaching as little as one can possibly manage have taken on the value once associated with the Quest for the Holy Grail. . . .
>
> And requests like that are by no means confined to the faculties of the major research universities. They've made their way down to the four-year colleges and are probably scoring inroads at the two-year colleges as well.[29]

Given the financial pressures faced by colleges and universities, occasioned in part by their attempt to serve so many constituencies in and outside the academic community, these trends should not be unexpected. Even elite institutions have difficulty sustaining costly advanced research programs along with strong undergraduate liberal arts programs. As expenses exceed revenues, higher education institutions are under increasing pressure to raise grant money – pressure only in part related to the merits of conducting research and attracting top-flight faculty members. For many institutions, the "indirect cost" component of grants has become a necessary prop to help support overall operating expenses. Colleges and universities also face growing pressure to raise private funds; however, legal restrictions prevent the use of most endowments for operating expenses, and donors, especially corporations, are increasingly earmarking their gifts for programs other than the liberal arts.

There are a number of reasons why the costs of higher education have outpaced the rate of inflation: a growing number of "exotic" programs across a wide range of academic and nonacademic areas, technological advances that have increased the costs of undergraduate education and of research, and increased institutional contributions to student financial aid (although these contributions cannot begin to compensate for the declines in the real value of government assistance).[30] These factors make it increasingly difficult for institutions to give high priority to undergraduate education.

The comments above are not meant to detract from the important role that research plays in U.S. higher education. It is generally acknowledged that no other nation can match the range and quality of research opportunities offered by U.S. colleges and universities. As Jean-Jacques Servan-Schreiber and Herbert Simon of Carnegie Mellon University put it, "For the first time in modern history, one country seems to serve, in the advanced sciences, as the university of the world."[31] However, there is a need for caution about the growing pressures for faculty members to conduct research and for undergraduate colleges to shift from their traditional teaching role to a greater emphasis on research. These choices have implications for the costs that society – and families – must bear and for the quality of undergraduate education. They have especially important consequences for the participation and retention of minority students in science and engineering.

The resource and policy trends addressed here play a significant role in the participation of minorities in science and engineering education. While there are a number of effective programs and while there have been recent gains in minority participation in some fields of science and engineering, the situation remains fragile. At a time when increasing numbers of minority young people might wish to seek an education in science and engineering, the negative trends with respect to financial resources and institutional priorities have created unintended barriers to the continuing progress of minorities in science and engineering, and these trends threaten to overshadow potential gains and effective programs. These trends, which affect the entire student population, are particularly troublesome for minorities – and even more so for those who are interested in entering science and engineering.

The result is a personal hardship for the students involved and a loss of technical skills to the nation as a whole at a time when U.S. competitiveness in the international marketplace increasingly depends on a highly skilled labor force. Indeed, because educational attainment is highly correlated with the level of parental education, our educational losses are not simply "one-time" misfortunes for this generation of young people – or for the society at large. They have enduring implications for future generations.[32]

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"And when my son didn't get first prize at the science fair, the judge mysteriously disappeared."

Viewing the Now-Distant Past:

How Faculty Members Feel When The Reward Structure Changes

The usual winner in the race for the deanship is the one who poses the rather silly challenge of making Plainview State another Stanford, Mr. Soder points out. Many faculty members tend to feel left out, ignored, stepped on, stepped over, treated with contempt – sentiments hardly conducive to good preparation of teachers!

BY ROGER SODER

IN "Theory," Wallace Stevens reminds us that "one is not duchess a hundred yards from a carriage." And in practice, one is not a professor outside of an institution of higher education. In practice, if we are to understand and ascribe meaning to the work and life of faculty members in schools, colleges, and departments of education – a group of central concern in the Study of the Education of Educators (SEE) – we must be acutely aware of the institutional structures and expectations that influence the work and life of faculty members. In designing the SEE, we focused particular attention on three areas of structures and expectations: 1) what faculty members say their institutions *do* and what they *should do*, 2) what faculty members say they themselves *do* and what they *should do*, and 3) what faculty members say their rewards for work *are* and what they *should be*.

Two related objectives compel our continuing investigation of these three topics.

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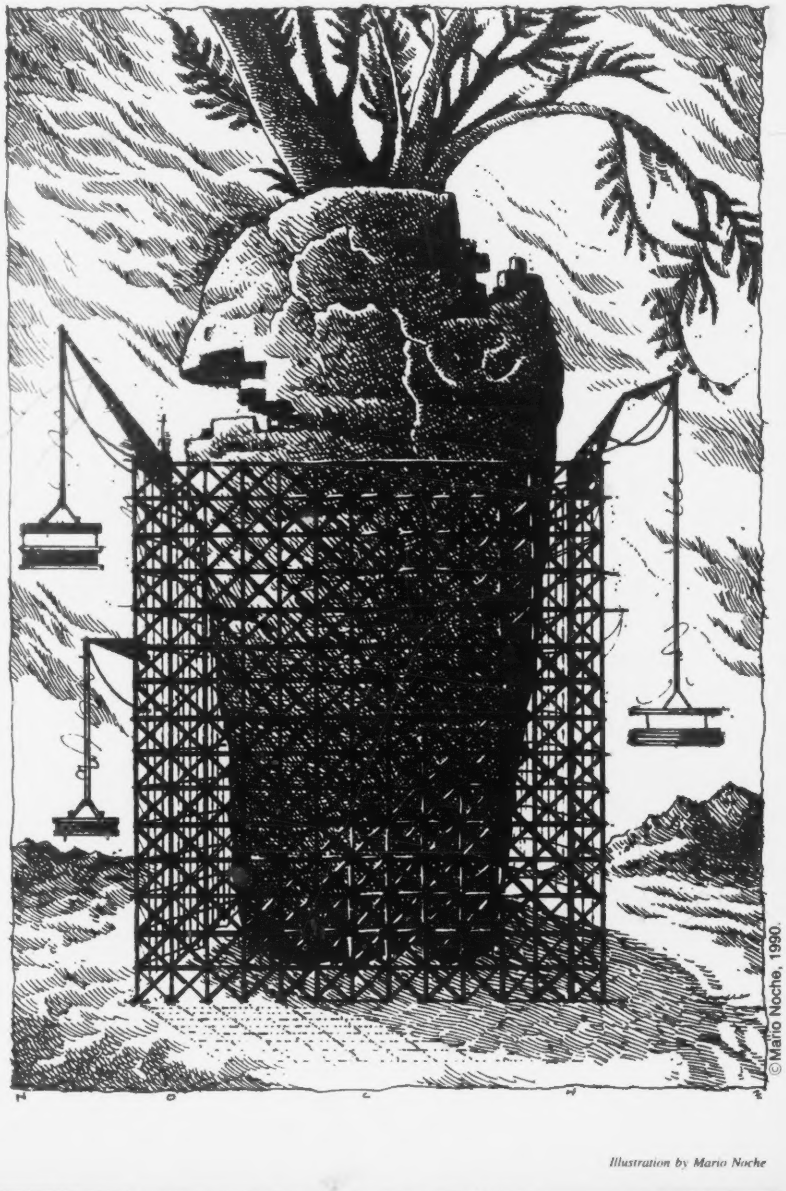


Illustration by Mario Noche

First, the faculty is a key element in understanding the enterprise of preparing educators. Accordingly, we must pay attention to the perceptions and preferences of faculty members in order to understand the whole. Second, the SEE will not end with the publication of findings and recommendations. A long-range goal of the study is the actual adoption and testing of those recommendations – recommendations that we anticipated early on would be fundamental to the enterprise of preparing educators in both a philosophical and a structural sense. It became equally clear early on that we must pay attention to what it means to be a faculty member in the context of the institution if we are going to identify the changes needed in that context to put in place our fundamental and far-reaching recommendations.

In short, we are contemplating an attempt at what might be seen as a kind of cultural dispersion, and so we must deal with the realities with which such attempts are always confronted. As William McNeill suggests, "When a group of men encounter a commodity, technique, or idea that seems superior to what they previously had known, they will try to acquire and make their own whatever they perceive to be superior, but only as this does not seem to endanger other values they hold dear."[1]

Clearly, we must understand the values held dear by university faculty members if we are to develop an effective rhetoric and if our claims are to be accepted. Such understanding, in turn, is related to a critical decision about the reform strategy on which the rhetoric is to be predicated: namely, the determination of which faculty and institutional traits to retain and which to replace. Albert Hirschman has outlined the importance of this decision with regard to underdeveloped countries. Instituting a project in an underdeveloped country, he argues, implies

> (1) a decision to accept some status quo traits as temporarily unchangeable characteristics of the environment that will mould the project, and (2) a decision to consider others as subject to and ready for the kind of changes that are required for making a success of the project.
>
> The project may therefore be said to act at the same time as "trait-taker" and as "trait-maker": the decision which traits to "take," that is, accept (because they are considered unchangeable), and which ones to make (by changing existing or creating new traits) is crucial to project design and success.[2]

What Hirschman so perceptively notes about development projects elsewhere holds equally true for what is, in effect, our own development project. We, too, are involved in trait-taking and trait-making. In the early stages of development, we must bring data and analysis to bear on decisions about which faculty and institutional traits or attributes to accept as given and which to modify or make over if we are to have a coherent strategy.

These are difficult decisions. A large part of the difficulty derives from the particular traits under consideration. We are talking, after all, of matters that go to the core: what it means to be a faculty member and, inevitably, what it means to live one's life. To say that one's work should or should not be thus and so is to say a great deal. Most of us define our sense of identity in large part in terms of our work; we confuse what we *do* with what we *are*. Thus when work fails us (through unemployment, boredom, burnout, or what we see as the venal actions of others), we have no center – nothing to fall back on. To say, in effect, "I am my work" is easy – perhaps habitual – and with that ease, I forget that I am also a son, husband, father, uncle, friend, and human being. To talk of work, then, is a dangerous business. And it is most assuredly dangerous when (as we shall see) one's ability to find new work is severely constrained.

We need to move with some care. Despite what some might see as harsh caricature and caustic criticism in the following pages, I have in fact approached these matters of faculty members' feelings and values with trepidation and, I hope, respect. There are, of course, many faculty members who do not much fit any of the characterizations herein; my intent has been to delineate what appear to be predominant, recurring, and important traits in a goodly portion of faculty members and institutions.

Data pertaining to these traits were obtained through questionnaires and interviews. A faculty questionnaire included 10 items dealing with various aspects of faculty work in its institutional context.[3] One item focused on the extent of current and desired activities, such as publishing in practice-oriented journals, publishing in research-oriented journals, and providing services as a paid consultant. Another item asked for the actual and desired percentage of time allocated to four areas: teaching, research, administrative/committee work, and professional service.

The remaining eight items focused on nine institutional missions or areas of emphasis: teaching, research, development, ad hoc services, effecting change, preparing teachers, preparing special educators, preparing administrators, and preparing researchers. We asked faculty members to indicate:

- the perceived importance of these missions to their institutions now and in the future;
- the respondents' own perspectives regarding the importance of the missions now and in the future;
- the extent of the respondents' current and future involvement in the missions;
- the reasons for the respondents' lack of involvement in missions dealing with educator preparation;
- the major source of colleagueship in pursuing activities related to the missions;
- the extent of support for faculty members in pursuing the missions;
- the weight that institutions place on the missions when considering faculty members for promotion and tenure; and
- the weight that respondents desired their institutions to place on the missions when considering faculty members for promotion and tenure.

Interviews with faculty members and academic administrators also included several questions dealing with institutional missions and faculty work. Interviewees were asked to comment on the reward structure in universities and on what it takes to get tenure and to earn a promotion. We asked them to indicate whether the reward structure had changed and, if they thought it had, the direction of that change and the rationale put forth to explain it. We also asked them to comment on the extent to which the education unit and the university were experiencing a shift in mission or emphasis.

In what follows, I discuss some of the findings from the questionnaires and interviews. It should be noted that in this article I will present only selected data for illustrative purposes; I have treated the data more fully elsewhere.[4]

QUESTIONNAIRE DATA

Institutional mission. Respondents were asked to indicate their perceptions of the current importance placed on the nine

Across institutional types, teaching is desired as the first priority; preparing teachers is desired as the second.

posited institutional missions by their respective schools, colleges, and departments of education. They were also asked to indicate how important they felt each mission *should* be at their institutions. The four categories of importance were "not at all," "marginally," "moderately," and "centrally." Responses were analyzed by institutional type (three types of public institutions: "flagship" or research institutions, major comprehensive institutions, and regional comprehensive institutions; and three types of private institutions: major, regional, and four-year liberal arts institutions).[5]

Responses for institutional missions perceived and desired as "centrally important" are shown in Table 1.

In terms of perceptions of current importance, these data suggest that faculty members in flagship public universities are much more likely to perceive their institutions as focusing on research and the preparation of researchers than on the other posited missions. Also, those in flagship public universities are less likely than their colleagues in other types of institutions to perceive the remaining missions as centrally important to their institutions.

Faculty members in major public universities put their institutions' priorities in slightly different order, and the rankings are more evenly distributed. We observe that preparing teachers has the highest rank (59.8%), followed by teaching (49.1%), research (43.9%,) and preparing administrators (42.9%). Among those in regional public universities, preparing teachers has the highest rank (78.2%), followed by teaching (73.9%) and preparing special educators (53.8%). Among those in major private institutions and regional private institutions, the priorities show a similar pattern, with the exception of research. As we might expect, those in major private institutions see a high priority placed on research. Those in private liberal arts colleges, on the other hand, perceive their institutions as focusing first on teaching (81.6%), followed closely by preparing teachers (77.8%), with research a distant third (34.8%).

Examining the data in Table 1 in terms of faculty members' desired priorities for their institutions, we note that those in flagship public universities want the highest priority to be placed on teaching, followed by preparing teachers, research, and preparing researchers. For those in major public universities, the order shifts somewhat, with teaching still ranked first, but followed by preparing teachers, effecting change in public schools, and research. Those in regional public universities desire the highest priority to be placed on teaching, followed by preparing teachers, preparing special educators, and effecting change.

For those in major private institutions, the priorities took the order of teaching, preparing teachers, research, and effecting change. Those in regional private institutions desire the highest priority to be placed on teaching, followed by preparing teachers, effecting change, and preparing administrators. Finally, for those in private liberal arts colleges, teaching and preparing teachers have the highest desired priorities, followed by effecting change and research.

Without exception across institutional types, the first and second desired priorities are the same: teaching is desired as

TABLE 1.

Missions Perceived and Desired as Centrally Important, by Institutional Type

Mission		Flagship Public %	Major Public %	Regional Public %	Major Private %	Regional Private %	Lib. Arts Private %
Teaching	Perceived	28.9	49.1	73.9	71.8	76.0	81.6
	Desired	76.2	80.0	91.8	94.9	93.3	95.7
Research	Perceived	81.3	43.9	23.6	52.6	32.7	34.8
	Desired	60.8	52.7	32.0	62.8	41.3	26.1
Development	Perceived	8.5	16.4	18.0	7.9	28.2	6.7
	Desired	36.2	37.9	39.0	25.0	41.7	15.6
Ad hoc services	Perceived	7.0	20.5	16.7	13.2	22.1	4.4
	Desired	25.1	36.3	37.6	24.0	35.0	8.9
Effecting change	Perceived	12.0	22.4	21.0	30.3	36.9	15.6
	Desired	50.0	57.1	54.1	61.8	58.3	37.8
Preparing teachers	Perceived	38.6	59.8	78.2	71.6	72.7	77.8
	Desired	66.7	75.6	86.7	82.4	83.5	89.1
Preparing special educators	Perceived	15.1	33.9	53.8	36.8	30.1	4.3
	Desired	33.5	44.6	58.8	41.9	43.6	17.8
Preparing administrators	Perceived	19.5	42.9	39.5	36.8	43.7	20.0
	Desired	37.8	48.8	43.1	42.7	51.0	21.7
Preparing researchers	Perceived	47.9	16.4	8.2	22.7	5.8	6.8
	Desired	56.0	47.3	21.6	46.1	13.7	15.9

the first priority; preparing teachers is desired as the second priority.

Table 1 reveals varying degrees of discrepancy between the perceived and the desired priorities given to each mission. For example, 28.9% of those in flagship public universities perceive teaching as centrally important, while 76.2% desire teaching to be centrally important. Among those in major public universities, the discrepancy between the perceived and the desired importance given to teaching is considerable as well. The discrepancies between the perceived and the desired primacy of the teaching mission are considerably smaller for the other institutional types.

For most of the missions across institutional type, the percentage desiring a mission to be emphasized is larger than the percentage perceiving it to be emphasized. There are two exceptions to this pattern. Of those in flagship public universities, 81.3% perceive research as centrally important, while only 60.8% desire research to be central. Of those in private liberal arts colleges, 34.8% perceive research as centrally important in their institutions, while only 26.1% desire it to be centrally important.

Tenure. Respondents were asked to indicate their perception of the weight given in tenure decisions to participation by faculty members in each of the nine posited missions. We also asked them to indicate the weights they desired their institutions to give to each mission. There were four response categories: "not considered," "marginally helpful," "moderately helpful," and "essential." Responses for the missions considered to be "essential" for tenure decisions are presented in Table 2.

We observe patterns in Table 2 that are similar to those in Table 1. For example, only 17% of those in flagship public universities perceive teaching as essential for tenure, while 77.6% desire it to be. Similar discrepancies with regard to teaching are noted for major public universities (40.4% perceived versus 80.1% desired) and major private institutions (25.4% perceived versus 84% desired).

Participation in relatively few of the institutional missions is perceived as currently essential for tenure. Teaching and research are the two missions seen to be essential for tenure. Note, too, that across all institutional types respondents indicate a desire for research to be less important as a criterion for tenure than it currently is. For example, 92.8% of those in flagship public universities perceive research as currently essential for tenure, but only 58.6% indicate that they would prefer research to be essential for tenure.

Missions that are essential for tenure. So far our comparisons have dealt with perceptions of the current importance of missions versus the desired importance. And there are considerable discrepancies between what faculty members see as the current state of affairs and what they would like to see. Yet another comparison is worthy of note: the percentage of respondents who indicate that a mission is seen by their institution as "centrally important" can be usefully compared with the percentage who indicate that participation in that mission is "essential" for tenure. These data are reassembled from the previous two tables and presented in Table 3.

> *Participation in relatively few of the institutional missions is perceived as currently essential for tenure.*

At major private institutions 71.8% of the faculty members perceive teaching to

TABLE 2.
Missions Perceived and Desired as Essential for Tenure, by Institutional Type

Mission		Flagship Public %	Major Public %	Regional Public %	Major Private %	Regional Private %	Lib. Arts Private %
Teaching	Perceived	17.0	40.4	60.0	25.4	74.7	69.2
	Desired	77.6	80.1	89.7	84.0	81.2	93.2
Research	Perceived	92.8	72.6	52.2	91.5	58.6	74.7
	Desired	58.6	58.6	29.7	56.6	40.6	23.3
Development	Perceived	6.9	7.1	11.1	10.9	9.1	12.5
	Desired	21.6	17.4	23.8	22.9	23.5	11.6
Ad hoc services	Perceived	2.7	8.8	10.3	4.5	11.4	0.0
	Desired	10.4	23.3	21.6	17.6	20.0	9.1
Effecting change	Perceived	2.9	2.2	4.5	4.7	7.9	0.0
	Desired	25.9	27.2	25.3	27.6	25.0	9.1
Preparing teachers	Perceived	7.4	14.8	32.8	11.9	39.2	26.3
	Desired	45.8	46.0	58.7	43.2	60.8	67.4
Preparing special educators	Perceived	4.9	14.1	26.3	11.8	23.1	0.0
	Desired	21.8	26.5	36.8	24.3	33.0	4.8
Preparing administrators	Perceived	3.5	14.9	19.3	10.7	33.3	0.0
	Desired	20.5	28.4	25.8	28.8	34.4	14.3
Preparing researchers	Perceived	29.2	12.7	8.2	18.8	10.0	10.0
	Desired	40.3	31.9	15.9	34.7	11.6	7.0

TABLE 3.

Missions Perceived as Centrally Important and As Essential for Tenure, by Institutional Type

Mission		Flagship Public %	Major Public %	Regional Public %	Major Private %	Regional Private %	Lib. Arts Private %
Teaching	Centrally important	28.9	49.1	73.9	71.8	76.0	81.6
	Essential for tenure	17.0	40.4	60.0	25.4	74.7	69.2
Research	Centrally important	81.3	43.9	23.6	52.6	32.7	34.8
	Essential for tenure	92.8	72.6	52.2	91.5	58.6	74.7
Development	Centrally important	8.5	16.4	18.0	7.9	28.2	6.7
	Essential for tenure	6.9	7.1	11.1	10.9	9.1	12.5
Ad hoc services	Centrally important	7.0	20.5	16.7	13.2	22.1	4.4
	Essential for tenure	2.7	8.8	10.3	4.5	11.4	0.0
Effecting change	Centrally important	12.0	22.4	21.0	30.3	36.9	15.6
	Essential for tenure	2.9	2.2	4.5	4.7	7.9	0.0
Preparing teachers	Centrally important	38.6	59.8	78.2	71.6	72.7	77.8
	Essential for tenure	7.4	14.8	32.8	11.9	39.2	26.3
Preparing special educators	Centrally important	15.1	33.9	53.8	36.8	30.1	4.3
	Essential for tenure	4.9	14.1	26.3	11.8	23.1	0.0
Preparing administrators	Centrally important	19.5	42.9	39.5	36.8	43.7	20.0
	Essential for tenure	3.5	14.9	19.3	10.7	33.3	0.0
Preparing researchers	Centrally important	47.9	16.4	8.2	22.7	5.8	6.8
	Essential for tenure	29.2	12.7	8.2	18.8	10.0	10.0

be of central importance to the institution, but only 25.4% perceive it to be essential for tenure. While only 34.8% of those at private liberal arts colleges perceive research to be of central importance to their institutions, 74.7% perceive it to be essential for tenure. For those at flagship public universities, 38.6% indicate that their institutions profess the preparing of teachers to be of central importance, but only 7.4% indicate that preparing teachers is essential for tenure. At major private institutions, 71.6% say that preparing teachers is of considerable importance, but only 11.9% see preparing teachers as essential for tenure.

THE DIFFERENCES we have noted between the perceived and the desired priorities for the nine institutional missions are one sort of discrepancy. But, as the data in Table 3 suggest, there is another order of discrepancy – that between perceptions of what the institution says is important as an institutional mission and perceptions of what it says is important for tenure.[6]

Both orders of discrepancy have important implications for faculty morale. But the second order may have more impact on morale in the long run. For example, one can privately wish that one's institution emphasized teaching more than it does and emphasized research less – and still come to terms with the differences in attitudes. It may be more difficult to deal with the fact that, while one's institution claims that teaching is more important than research, research carries the day when it comes to tenure decisions. Discrepancies between one's own perceptions and desires can either be accepted, or one can try to reduce them. Discrepancies between perceptions of institutional declaration and perceptions of institutional reality bespeak institutional hypocrisy. Dealing with hypocrisy is much harder than dealing with the fact that you can't always get what you want.

INTERVIEW DATA

Interviews with faculty members at the 29 institutions tended to confirm the discrepancies we found in the questionnaire data. I will focus here on the portions of the interviews that dealt with the institutional reward structure.

The four flagship public universities in our study have a perceived emphasis on research, on publishing in refereed journals, and on getting grants. For three of the four institutions, the current reward structure represents a change from 15 to 20 years ago. Listen to these members of the faculty tell the tale.

> Now, it's generate dollars, which will translate into research where publications will accrue. Fifteen years ago getting tenure and promotion was like high schools – letter in the mail, congratulations. Last dozen years is when the publishing and research emphasis changed. (Associate professor, agriculture, six years at current institution)

* * *

> Research and writing are the only ways you get promoted, but it's not enough to write for the field – you have to write for your colleagues. We had a man in math ed. who didn't get promoted because he just published in teacher education magazines. The staff dwindled when enrollment dropped in the Seventies. Largely research people hired in the Eighties – they haven't been in teacher education. (Professor, English education, 26 years)

The perceived emphasis at the major public universities is also on research and publication. Some faculty members do not see this as representing much change in the reward structure:

> Absolutely publish. I don't think it's changed. Other people will say that it has. They were *told*, they say, that teaching and service were equally important, but I don't think so. Teaching is not even an evaluation category. (Associate professor, curriculum and instruction, 18 years)

Others do see changes, with negative consequences:

> We were always expected to do some scholarly work along with everything else. But not like now. Now, they've got an idea we should have a national, even international, reputation for productivity. I don't know what's going to happen after my generation retires. They place such an emphasis on research and such a low emphasis on teaching. The young faculty come here, [and] you can't blame them for wanting to do research and ignore teaching because they know they have to. Sooner or later it's going to catch up with us. Legislators are going to send their kids here, there will be nobody here to teach these kids, except teaching assistants, and *then* you'll see funding cutbacks like never before. (Professor, science education, 32 years)

For some older members of the faculty, there is a sense of being pushed aside:

> The reward structure changed from primarily teaching in 1975. I wanted to teach. The young folks don't know anything else [other than the current reward structure]. A person like me [a slight shrug of the shoulders], I'm tolerated. (Professor, math methods, 25 years)

Some regional public universities in the study are perceived as maintaining modest goals. Others are perceived as institutions in flux, moving to something more, something bigger, with attendant tensions:

> It changed just about the time I got here, to 1) publish or perish, 2) politics and the old-boy network and how well you get along with certain people, and 3) teaching, sort of. That is to say, you'd best not be a really lousy teacher. But it's publishing first and foremost. There are serious clashes as a result of this shift from the old reward structure (which was teaching plus service), and it's been tough for some of the older folks. They feel threatened by those of us who do scholarly work. There are clashes on search committees between those who are looking for researchers and scholars and those who just want to hire some good little teachers. (Associate professor, elementary education, six years)

Teaching is generally not seen as highly valued in regional public universities:

> Above all else, first, publication and scholarly work; then politics, which are incredibly important, as are personalities; third, it's necessary to be here quite a few years, and then there's social grace. Teaching and service will not have an impact on promotion, unless you are *really* crummy. Good teaching and service will be, at *best*, nonnegative. (Associate professor, math methods, six years)

Or teaching is valued in a limited sense:

> You *must* be a teacher. Student evaluations are taken quite seriously. You can talk bullshit as long as it's rated high by the students. (Professor, school psychology, 12 years)

With the changes in reward structure come changes in evaluation. Some regional public universities are using point systems:

> Now, it's publishing. Until four to five years ago, it wasn't publishing. It was teaching and committee assignments, it was an automatic promotion. Now, you can get an infinite number of points for publishing, but a finite number of points for presentations and everything else. (Associate professor, research and psychology, 12 years)

* * *

> You want to know how it works in [my department]? Okay. If you get in [a leading journal], that's four points. [Another leading journal] is three points. A journal like [a journal oriented to applied high school teaching] is the lowest -- that gets you one point. If you're second author, only half the points. (Professor, speech communication, 18 years)

* * *

> Publishing henceforth will be the name of the game. I keep a daily journal to keep track of what I'm doing. We'll be called on to do monthly reports. I keep two calendars, one in my bag here, one in the house for documentation. [The dean] said to us in no uncertain terms that the next merit increases and tenure and promotion would be based on research and publishing. When I came it was teaching, service, advisement, and creative activities. (Professor, education, eight years)

There is disagreement over what one should be rewarded for in the regional public universities:

> In 1969 the rewards here were centered on being a good teacher and providing service to students. In the last several years it's changed to publication, research, scholarly work, making a contribution to one's academic field. "Pure" research is emphasized. I do lots of inservice in the districts – there's *no* reward for that. For example, I work with teachers on how to present short stories, [and some faculty members here will] say that you're just having *fun*. (Professor, speech communication, 18 years)

And, again, there are tensions:

> The reward structure is more rigid. There's more emphasis on research and publications. Our dean favors those who do research and get grants. There's a tendency to look for new people with long publication lists. Depends on who is on the selection committee. The younger faculty are really torn apart – role demands from above versus doing a good job with preservice. The Stanford or Berkeley people who come here are much more oriented toward research. (Professor, science education, 28 years)

Where one is to find the time to meet the new expectations in regional public universities is uncertain:

> Publishing and grants are much more important. This definitely has been a change in the last 10 years. It used to be quality teaching as the norm. Now it's research, still some teaching. The teaching load is four courses a semester. No reductions. Lots of pressure. There's no support, no time to do a good job. It used to be teaching only, publications and grants were feathers in the cap. Now it's shifting and people are pissed, no help, no travel. (Associate professor, math education, eight years)

Some speak of disorientation:

> Right now, we don't know what our mission is. There are lots of people who have been here 20 to 25 years. They were elementary school teachers before that. They haven't grown. They still think they are in public school. (Professor, secondary education, 14 years)

Others say they intend to keep doing what they feel they should be doing:

> When I came here, it was teaching and community involvement. I got promoted that way. . . . Now they want

The rules have changed for the veteran faculty member, and dealing with that change can be very painful.

> to make [research] an important item. Every time we get a new dean or vice president for academic affairs, they make a big deal about research. Sometimes it seems they would like to have everything. I'll retire as an associate professor because I won't sacrifice my teaching for research. (Associate professor, psychology, 16 years)

* * *

> I'm a full professor. You can't teach an old dog new tricks, and like I said, I came here because I wanted to teach, and I was hired to teach, and that's what I'm going to continue to do. (Professor, foundations, 20 years)

Those in the three types of private institutions in the study indicated sentiments similar to those of their colleagues in public institutions. The reward structure is perceived as centering more and more on research and publication. At the major private institutions, the change in emphasis is not surprising. However, at the regional private institutions and at the private liberal arts institutions, the push toward research is more of a jolt. From a liberal arts institution comes what might be a summary of the whole:

"I can spell almost all of cat."

> The reward structure is the same as everywhere, it seems. A lot of publishing is now expected, a change in the last five years. We've lost a lot of good people who came in here to teach and didn't get tenure. The administration wants to go *national*, believe it or not. They're already regional, they think, and are positioning themselves for bigger and better things. (Associate professor, counseling, six years)

CONCLUDING COMMENTARY

There is considerable unhappiness among many faculty members about their work in its institutional context. There are considerable gaps between what they say they want to do and what they say their institutions require them to do; these gaps, of course, vary by type of institution. The education faculty, as has long been established, sees itself and is seen by others as having comparatively low status.[7] When one adds to low status the discrepancies between the perception of what one is required to do and what one wishes to do, the situation of many faculty members can seem quite bleak. We are reminded of W. H. Auden's soldier patrolling Hadrian's Wall: "The rain comes pattering out of the sky / I'm a Wall soldier, I don't know why."[8]

Some may feel that our portrait of the plight of the education faculty is too gentle, too uncritical. Surely, one might argue, people in all occupations feel discrepancies between what they wish to do and what their situation dictates. Sinclair Lewis tells us that George Babbitt wanted to be governor but ended up selling real estate with his father-in-law. But there are lots of would-be governors. Or doctors. Or lawyers. I know someone who came out of law school intending to be another Clarence Darrow, fighting for the underdog. He has spent the last 25 years cranking out forms and briefs for small businesses. It happens all the time. Why should the difference between dream and reality be any more painful for education faculty members than for those in other occupations?

Let us compare the situation of our would-be Clarence Darrow with that of a hypothetical 25-year veteran of the education faculty at any one of the 29 institutions we visited. In some respects, their situations are similar. Our lawyer knows that he is not going to be another Darrow. He has come to terms with his life – as much as most of us do – and he is reasonably happy with his work. In like manner, our veteran faculty member knows he is not going to be another John Dewey, but he, too, is reasonably content with his life and his work.

Yet in one critical respect their situations are much different. Nobody is asking our lawyer to *become* Clarence Darrow after all those humdrum years of filling out forms. Nobody is saying, in effect, "If you don't start doing what Darrow did, you're all washed up, and you might as well pack it in." Nobody is changing the context of work for our lawyer. But the context of work for many faculty members in education is changing drastically, and that is the critical difference. In many of our 29 institutions, we can find veteran faculty members being confronted with the shift from a context of work focused on teaching and service to a context that primarily values research, publication, and the pursuit of extramural funding.

The rules have changed for our veteran faculty member, and dealing with that change can be very painful. For many on the education faculty, that pain is a very real part of their lives. What they did all those years, what they thought others thought of them, was pretty much settled. With the advent of new plans, new visions, a new president or provost or dean bent on turning that former normal school into Stanford before he or she leaves in three years – all of a sudden nothing is settled. The pain is made worse for many by the knowledge that there is no other place to go. The labor market for faculty members has all but collapsed, and the situation won't change until at least the mid-1990s.[9] Faced with perceived intolerable work circumstances, one can still say to oneself or to trusted cronies, "I'm saying to hell with the new dean and his insane desire to turn this place into Stanford – he can ruin this place without me," but that brave declaration no longer carries the conviction it once might have. Why should things be any better in some other academic pasture? If you are pushing 50 and have not published anything remarkable in the last 10 years, surely it is unreasonable to believe that you can dust off the Rolodex, get on the phone, fax your vita to a number of institutions, and be secure in a place where they really value teaching.

The situation, in short, is painful. The context has changed for the worse, and one cannot leave the context. We are very close to what Gregory Bateson calls a double bind.[10] The context tells you that you are bad, but you cannot leave the context.

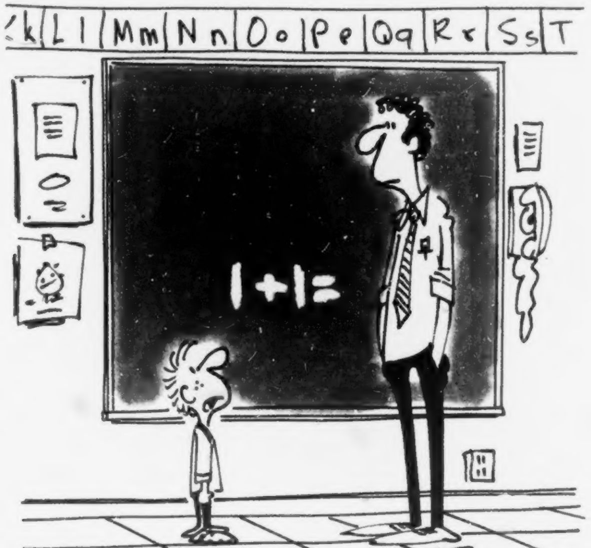
This is not to say that all faculty members are working at full capacity. In any institution, one will find professors content to coast, no matter what the program is and no matter what kinds of support are provided. The most reasonable response from administrators in such situations is a kind of triage. Surely we are not wishing for a return to halcyon days where nothing changed. "It is impossible for a state to remain forever in the peaceful enjoyment of its liberties and its narrow confines; for, though it may not molest other states, it will be molested by them."[11] What Machiavelli tells us is impossible for a state is equally impossible for an academic institution and its teacher preparation program. It is not a question of denying change. We should question the *direction* of the change in fundamental purpose.

Today, the direction of the change in schools, colleges, and departments of education is toward emulation of research institutions. When an academic administrator is in a tight race for a job, campaign promises tend to focus on solemn assurances of more laboratories and more rats – or whatever the current researchers like most – punctuated by even more solemn assurances that the place will be bigger and perhaps even better than Stanford in 10 years' time. Few competitors for the job will be so bold as to claim that Plainview State University would be better off trying to deliver the best possible teacher preparation program, while leaving the aspiration to be world-class research institutions to others.

The usual winner in the race for the deanship is the promiser of research prestige, the one who poses the rather silly challenge of making Plainview State another Stanford. Many faculty members tend to feel left out, ignored, stepped on, stepped over, treated with contempt. Often these faculty members wait – watching, counting the days – until the winner decides that three years is enough and that it is time to turn another former normal school into a world-class research institution. Hardly conducive to good preparation of teachers!

A more apt challenge would be to develop a good teacher preparation program and to ignore the supposed glories of the research institution. In terms of Hirschman's notions of traits, it might be much better (and much more ethical) to *take* faculty traits rather than to *make* them. Developing and supporting faculty members – rather than viewing them all as relics of a now-distant past – might not only prove to be a more decent way to treat people, but might also generate genuine commitment to a good teacher preparation program.

> *It is not a question of denying change. We should question the* direction *of the change in fundamental purpose.*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"For that *you went to college?"*

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1. William McNeill, *Venice* (Chicago: University of Chicago Press, 1974), p. xv.

2. Albert O. Hirschman, *Development Projects Observed* (Washington, D.C.: Brookings Institution, 1967), p. 131.

3. Kenneth A. Sirotnik, *Studying the Education of Educators* (Seattle: Center for Educational Renewal, University of Washington, Study of the Education of Educators Technical Report No. 2, 1988).

4. Roger Soder, *Faculty Work in the Institutional Context* (Seattle: Center for Educational Renewal, University of Washington, Study of the Education of Educators Technical Report No. 3, 1988).

5. See Kenneth A. Sirotnik, "Studying the Education of Educators: Methodology," *Phi Delta Kappan*, November 1988, pp. 241-47.

6. The questionnaire included similar items regarding what is and what should be important for promotion. Responses for the promotion items follow a pattern very similar to that for the tenure items.

7. Roger Soder, *Status Matters: Observations on Issues of Status in Schools, Colleges, and Departments of Education* (Seattle: Center for Educational Renewal, University of Washington, Study of the Education of Educators Technical Report No. 4, 1988).

8. W. H. Auden, "Roman Wall Blues," *Selected Poetry* (New York: Modern Library, 1958), p. 36.

9. See William G. Bowen and Julie Ann Sosa, *Prospects for the Faculty in the Arts and Sciences* (Princeton, N.J.: Princeton University Press, 1989).

10. Gregory Bateson, *Steps to an Ecology of Mind* (New York: Ballantine, 1972). See especially the essays on double bind theory in Part 3.

11. Niccolo Machiavelli, *Discourses*, trans. Leslie J. Walker (London: Penguin Books, 1970), pp. 335-36.

On the Eroding Foundations Of Teacher Education

We need to stop thinking about "courses" in foundations, Mr. Sirotnik maintains. Instead, wisdom, prudence, judgment, and responsible action must be integrated with method and experience in the education of educators.

BY KENNETH A. SIROTNIK

IT WAS LATE morning. I was getting a bit grouchy, having been left waiting in the university's conference room for nearly an hour because of a major snafu in the scheduling of my interviews with students. We were now well into our Study of the Education of Educators; I had already interviewed 94 students at 22 colleges of education, and some fairly solid patterns were becoming apparent in their responses. My mind waxed methodological as I remembered Florian Znaniecki and his method of analytical induction: form your hypothesis, interview, narrow or refine the hypothesis, interview, . . . and in 30 or so interviews, a fairly stable finding will emerge.

I had always thought that this was a rather silly notion. Yet the first 10 interviews with students in our study had suggested a pattern that only grew stronger with each successive encounter. Perhaps

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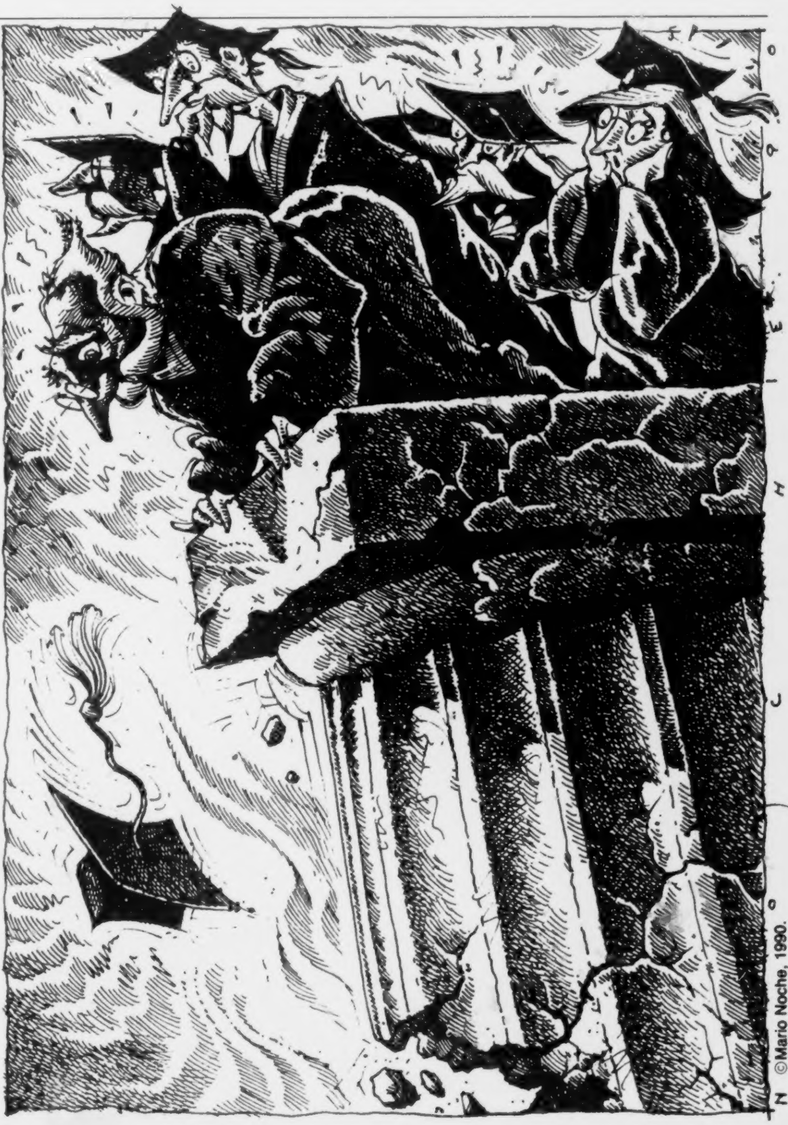
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Illustration by Mario Noche

Znaniecki was right. If we didn't interview students here at all, it would probably be no great loss. In fact, we could probably forgo the rest of our visits. After all, we had only seven institutions left.

Thoughts such as these generate a fair amount of guilt in a seasoned empirical researcher. Fortunately, my musings were interrupted as four students were herded into the conference room. You can't be a good educator without hope. Here was an opportunity, I thought, to get a lively conversation going. Typically, our research design called for individual interviews with students. But I welcomed the opportunity to depart from the routine. I recognized immediately that the students were the so-called nontraditional type – i.e., older, returning, postbaccalaureate. They seemed more mature, more worldly than the many young undergraduates I had interviewed elsewhere. Besides, this was the first truly urban, multiracial, multicultural campus that we had visited among the regional state universities in our sample. Surely my experience here would prove Znaniecki wrong!

As the four white students and I trooped into a small room and crowded around a table, I quickly rehearsed my plan to turn an individual interview routine into a group discussion. The improvisation went rather well. I shortened the usual introduction – why we are studying teacher education and so forth – and quickly got to who they were and why they were in the program.

My initial perceptions were fairly accurate. Three of the students were approximately 25 years of age and had decided to return to college to prepare to become teachers. The one younger student had just completed her baccalaureate and had entered the fifth-year teacher education program. One of the older students, clearly about to become a mother, was hoping to finish the program before she gave birth. Of the two males, one really wanted to be an actor but felt that he needed a back-up job. The other was preparing to be a science teacher and was quite serious about his subject and about the prospect of teaching. All four were secondary education students. None of them were terribly perturbed about being yanked out of their education classes. They agreed that the classes didn't matter much. What really mattered was getting out there in the classroom and teaching. Several wished they could just learn on the job, much as an apprentice learns a trade. The actor (a social studies teacher-to-be) expressed it succinctly: "I just want to be left alone to do my thing."

After weeks and weeks of this kind of interviewing, you become fairly adept at changing the direction of a conversation. And this I needed to do, if I wanted to get to one of the more difficult clusters of questions built into our study – those having to do with the moral and ethical dimensions of teaching. I worked my way toward several direct questions. "Is there any underlying educational philosophy in the teacher education program at this school?" I asked. After the all-too-familiar silence, one student asked the usual question: "What do you mean?" I got right to the core of the matter: "Well, for example, are there any underlying conceptions in this program as to what public schools are for – and *should* be for – in our democratic society?"

The silence was a bit thicker. The actor cut through it with the usual response: "Our professors don't try to indoctrinate us; they tell us to make up our own minds when it comes to beliefs and values." The mother-to-be on my right agreed. "Different people have different views of what ought to happen in schools," she said. "And those views need to be respected."

I had the sense that I was back in Iowa. A young senior there had politely reminded me that there is no one truth as to what schools are for. Or was that in Georgia, Massachusetts, or Colorado? It was, of course, all those places. The blank stares, the silences, the lack of comprehension, the articulation of relativistic values (both personal and programmatic) – all were too familiar. Znaniecki, you devil, you were right!

Perhaps it was my disappointment, or my grouchiness over botched-up scheduling, or the stuffiness of that little back room. I guess I'd heard the "to each his own" type of response once too often, and I departed from the interview protocol. Addressing the actor first, with a glance or two at the women on my right, I asked: "So it would be okay for a professor here to offer a course on the 'Pros and Cons of Child Abuse'?" Now the silence was as pregnant as the student beside me. The unborn child, some teacher's future charge behind the closed doors of a classroom, was particularly present.

It was a cheap trick, I admit. But the line between inquiry and action has always been a rather thin one for me. I had already obtained the information I needed for our research. Now I needed to teach. Moreover, I needed to test the hypothesis that these future teachers were indeed able to think critically and to engage in critical discourse. I needed to demonstrate (to them and to myself) that their apparent deficiency was a matter not of capability but of lack of opportunity and practice – not only in their current program but over some 17 years of formal education.

I didn't really get much of a chance to test my hypothesis. The students and I did have a conversation, however. They were a bit angry and frustrated by the challenge inherent in the title of my proposed course. "Child abuse is different; of course, we can all agree on that!" someone said.

"Is the abuse of children's bodies that much different from the abuse of their minds?" I countered. "We have compulsory public schooling in our constitutional democracy; these schools are ostensibly for the education of *all* children. Are there not any moral and ethical implications for how schools should be organized for student learning, for what teachers ought and ought not to do in their instructional practices, and, therefore, for what ought to be going on in your teacher education program?"

Although only a few minutes remained, our conversation had barely begun. Nonetheless, my impression was that these students were, indeed, capable of participating in such discourse. Their uncritical acceptance of "moral relativism" had been challenged, and they had begun to sense, if not to articulate, the dialectic between individual rights and the common good. They seemed ready to go beyond the daily details of doing education and to enter into the critical analysis of the perennial issues of why and how education should be done. Unfortunately, if our study's findings about this institution and most others in our sample are accurate, this session was probably the first and last such learning opportunity for these students.

AS I REVIEW some of these findings, readers should keep several points in mind. First, what is meant by the term *foundations* continues to be a matter of some dispute among educators and philosophers. Some see foundations as limited to the history and philosophy of education. Others see foundations as nearly the whole ball of educational wax. For

Teachers, to whom we entrust the future human resources of our society, should be able to think critically.

example, the contributions to George Kneller's edited collection on the foundations of education run the gamut from the history, philosophy, and sociology of education to educational economics, politics, law, and psychology – and on to considerations of the nature of scientific inquiry, organization and administration, curriculum and instruction, elementary and secondary education, and higher and continuing education.[1]

For the purposes of our study, we considered foundations to include the history, philosophy, and sociology of education as well as contemporary issues in the sociopolitical study of education and educational policy. In our survey instruments, we separated these foundational studies from educational psychology, general and specific methods, field experiences, and student teaching. Thus we had generic points of comparison across programs. In general, neither students nor faculty members had trouble making these distinctions.

However, for a number of different reasons, some people feel that the term *foundations* conveys the wrong message. For example, Harry Broudy argues that foundational studies should be integrated throughout the curriculum of teacher education and not just be offered as a "first" course or a "supporting" course, as the metaphor might suggest.[2] Donald Warren, on the other hand, argues that foundational studies are not central in the first place – that they serve to contextualize the work of teachers from the margins, not the core, of educational practice.[3]

This brings us to the second point that readers should keep in mind. Our study was conceived from the antithesis of Warren's point of view. For us – and for quite a few others who have considered the role of history, philosophy, and sociology in the education of educators – foundational studies are absolutely central to pedagogical theory and practice.[4] That so much controversy exists over the importance of foundational studies suggests just how important they are. It suggests that teachers, to whom we entrust the future human resources of our society, should be able to think critically. It suggests the profound connection between the ideology of schooling – what the purposes and functions of public schools ought to be – and what actually goes on within the walls of school buildings and behind classroom doors. While I cannot pursue the full scope of this argument here, most of it is contained in our recent volume on the moral and ethical dimensions of teaching.[5]

The third point readers need to remember is that, although this article focuses on the erosion of foundational studies in teacher education, this issue is but one aspect of the erosion of critical thought in our education system generally – but one point on a vicious circle. It is a rather crucial point, however, since it is the point at which educators enter the education system. Alexis de Tocqueville may have been the first to note the antiphilosophical bent of American culture.[6] Richard Hofstadter's more recent analysis is also seminal.[7] The intellectual quality of baccalaureate education generally has not received high marks from those who have studied it in some depth.[8] And although I take issue with the politically conservative nature of Allan Bloom's analysis, his insight into the mindless parroting of moral relativism by today's students cannot easily be dismissed.[9] My little group of four students fit Bloom's portrait well. In that sense the group was a representative sample of students in universities, not just those in teacher education programs.

BUT THESE were only four students out of more than 500 that we interviewed. (I've already hinted that the results of the other interviews were markedly similar, however.) Moreover, nearly 3,000 students responded to a comprehensive survey containing a number of items that were directly relevant to foundational studies. And we did not neglect faculty members. We interviewed more than 800 professors, asking them questions similar to those I asked in the student interview recounted above. More than 1,200 responded to a faculty survey; 772 were directly involved with the education of teachers and responded to items paralleling those in the student survey. In addition, we collected a truckload of curriculum documents and program specifications from which we drew a number of inferences. Finally, we formally observed 66 teacher education classes, 20 of which were "introduction to education" classes in which foundational studies are typically "covered."

Several papers in our series of technical reports include substantial summaries of the data we collected.[10] In this article I will present only selected, but representative, portions of the data.

I personally interviewed 128 students. Among the many clusters of questions I asked were the following: Are there any consistent values, beliefs, or moral imperatives that drive what goes on in your teacher education program? Is there an underlying philosophy? Where in your instructional program do you deal with what the purposes and functions of public schooling in a democratic society should be? For example, to what extent is there compatibility between the goals of educational equity and excellence? Is there any link between these issues and what teachers should (and should not) do in their instructional practices? To what extent are your assigned readings and your class discussions about other philosophical, social, and political concerns and issues in education?

Over and over again, we encountered the same patterns of responses. First, regardless of which question (or variant of the question) we used to begin this segment of the interview, the students generally drew an initial blank. Sometimes they were speechless. Often they asked for clarification. I came away with the definite impression that the language of these questions was simply not part of their vocabulary. It often took several questions and follow-up probes to elicit substantive responses.

Second, the substantive responses tended to be bimodal: students either indicated that they were not aware of any underlying philosophy driving the program, or they spoke in terms of some variant of moral or philosophical relativism (either their own or that of a professor or program). At several major private universities, students gave me the following kinds of responses:

> Everyone probably has their own values, beliefs, philosophy.

* * *

> They [the program] say that you, as teacher, have a say – take a stand in your school. But they [the program] don't take specific stands.

* * *

> We haven't really talked about this stuff. But every idea has a counter idea. So many different philosophies. . . . Professors advocate teachers to make their own decisions based on their own knowledge and their professional duties.

Responses from students attending large, regional state universities (formerly normal schools and state teachers colleges) included the following:

> Each of us are different people . . . lots of diversity. . . . Each school will have to have its own philosophy.

* * *

> I have my own values, but not to put them off on students. [Interviewer: What about this teacher education program?] Yeah . . . well, I don't know . . . maybe that the teacher is key to everything.

* * *

> Do you mean drugs and sex? [Interviewer poses several of the above clarifying questions.] Oh, well, I did have a philosophy class. We learned about different views on teaching. But I can't remember too much about it.

At major public research universities, students reported:

> We don't get into controversial issues in that we all agree on most instructional practices.

* * *

> Everyone should have their own set of values.

* * *

> The program tries to get students to examine their own values. . . . The norm here is not to get into critical dialogue, not to challenge peers.

Sometimes the contradictions in the responses were fascinating, as in the following remarks from a student at a regional state university:

> Educational values should come from our own American system of government. For example, equality. To promote this, students need to think critically. In foundations, these issues were addressed. [Interviewer: Like tracking?] Yes. I'm all for it. . . . It's unfair to the top students to bring them down to lowest common denominator. It's the closest thing we have to individualization. Ultimately, we're left to make our own critical judgments. Gosh, this is a really good question. . . . we must act in the best interests of students.

Occasionally, we were rewarded with more insightful statements from students. My colleague Roger Soder reports a dozen such statements (the only ones he could find out of 123 student interviews). Here are three examples from different institutions:

> It's really important that you have a certain set of morals because you're a role model. The morals of the community – honesty, don't steal, don't harm others. You're shaping the morals of young children. You have as much influence as the home. (Regional public university)

* * *

> You need to have good character. Kids are with you more than with their parents growing up. [Interviewer: What's good character?] Being moral, having moral beliefs. You're never neutral. Teaching is all about values. Kids can tell your beliefs. (Private liberal arts college)

* * *

> . . . but there's a fine line, state-controlled morals. It's a fiduciary relationship, not an equal relationship between teachers and students. The teacher has great strength in this situation; it's more like a doctor/patient relationship. (Regional public university)[11]

To what extent are critical discussions and reflective habits fostered by the foundations courses offered to students? Most foundations courses follow a lecture format with little student participation. Even in a program that seemed unusually rigorous in its foundational studies, a student reported this frustration: "We're getting crammed with stuff. . . . Hopefully we can talk about what it all means."

In the more typical, less rigorous programs, foundations come packaged in an "introduction to education" course – a smorgasbord of "crucial issues."[12] As students from two regional state universities reported:

> We covered women's role in education, multicultural ed, the textbook crisis, problems in getting jobs, unions. . . . This was one of the few nonstructured classes – nice compared to getting Piaget over and over again and having to memorize Bloom's Taxonomy. (Major public university)

* * *

> . . . drugs, discipline (a biggie), sex, AIDS, gay teachers, black teachers, and the difficulty in understanding Black English. (Regional public university)

Sometimes students reported opportunities for class discussions, but there remains some question about how useful

PRINCIPAL
WARREN

"You'd better come quickly. The first-graders have put Mr. Lamb in time out."

For their interest and value, foundations are rated a full point or more lower than other courses in the program.

those discussions are. A student at a major state university reported:

> In foundations we had an issue per day, pros and cons, lots of student discussion: mainstreaming, public vs. private schools, tracking. [The professor would] never advocate one opinion or another, kind of left us hanging. I couldn't figure out the right or wrong answer.

WE ASKED essentially the same questions of faculty members, and we got many of the same answers, although couched in more sophisticated terminology. I have neither the space nor the inclination to give examples of such replies. More interesting were the comments of faculty members who understood the importance of the questions and gave us honest evaluations of their schools' programs. Soder's report provides some examples of the more substantive responses from a variety of institutions:

> History of education is not required except for the educational leadership programs. There hasn't been anybody here for years who can teach philosophy of education. The state department of education has so many requirements that it's hard to get in any more of your own. (Major private university)
>
> * * *
>
> The question of moral imperatives doesn't come up formally. It comes up, some of it, in the foundations course. I can't say I've done a lot on that. (Public research university)
>
> * * *
>
> We don't have programs, we have collections of courses. We don't look at the nature of schooling, the nature of people, as we should. There's no sense of purpose. Courses are just a hodgepodge that grew like Topsy. We're plugging holes in dams. Individual professors will deal with effective schools or moral imperatives. But there's no framework. (Major public university)
>
> * * *
>
> Moral imperatives. [Long pause.] Well, I think there's been some discussion in some of the classes. Awareness does exist. [Long pause.] We do a poor job on the multicultural issues.[13] (Regional public university)

In the course of our study we had the rare opportunity of visiting a school of education that still had a separate and intact department of educational foundations. One professor at this public research university provided me with the most thoughtful response I received in the 151 faculty interviews that I conducted:

> My social foundations course is not the usual hodgepodge. The term *social foundations* is chosen carefully to reflect a cross-disciplinary and critical study of the relationship of schools to society. *Foundations* does not mean fundamentals – it means *social underpinnings*. We look systematically at the historical origins of political thought . . . and explore the consistencies of various theories. For example: tensions between conceptions of liberty and equality, equity and excellence. . . . How could one exist without the other? Whose interests are and are not being served?

Yet, as this professor lamented, no consistent programmatic philosophy existed in the teacher education program at that university, and two students in the same program could end up with very different experiences. Sure enough, this was borne out in my interviews. When I asked the students about the extent of their exposure to critical discussion about crucial issues, one student reported, "Yes, lots of good philosophical issues and arguments in [the above professor's] class." Another student replied, "Not much. . . . No specific philosophy or common thread – depends on the instructor."

Our survey instruments also tapped into perceptions and sentiments regarding foundational studies. In all items comparing foundational studies to other courses in the program or to noneducation courses, the foundations courses were viewed least favorably. For example, we asked students and faculty members to rate courses in the teacher education program according to how much of a contribution they would make to students' future success as teachers. We asked students to rate the interest level of the courses, and we asked faculty members to guess these ratings. We also asked students and faculty members what they would do with these courses if they were redesigning the program. To test the myth that education courses generally are rated poorly, we asked students to compare their level of interest in education courses to their level of interest in noneducation courses.

The results for a representative selection of teacher education courses speak for themselves (Tables 1-3). For their interest and value, foundations are rated a full point or more lower on the scale than other courses in the program. More than 25% of the respondents would like to see less emphasis on foundations. And in terms of interest level, all but the foundations courses fare quite well when compared to noneducation courses.

My colleague Phyllis Edmundson examined the curriculum of 28 foundations courses that were offered in 26 of the 29 programs we visited. She also observed 20 foundations classes in action. Her findings are neither encouraging nor surprising in light of the comments, perceptions, and sentiments expressed by the students and faculty members we interviewed.[14] These courses were typically introductory in nature, came early in the students' programs, consisted of haphazard collections of issues and topics, used a lecture format, and were mostly forgotten by the time students began their student teaching. In no instance were the historical, philosophical, and social foundations integrated throughout the teacher education curriculum. In only a few cases were students challenged to think critically or to engage in the kind of "reflective practice" we hear many reformers calling for today. Ironically, in those courses that seemed to present the greatest opportunities for critical thought and discussion, the fewest of these experiences were reported or observed.

SO WHAT DO we make of this rather unattractive portrait of foundational study? Are our results a fluke, a happenstance of unfortunate sampling? After all, we visited only 29 of the 1,300 or so programs that claim to prepare teachers. Readers must answer this question for themselves, drawing on their own recollections of and experiences with teacher education programs.

A review of the literature lamenting the erosion of foundations and foundational study, however, suggests that the phenomenon is widespread, not new, and not abating.[15] In 1958, for example, Paul Woodring concluded that "educational philosophy in America has fallen upon evil days. . . . Because we have not given sufficient attention to philosophical problems, we are afraid to attempt to discriminate between the profound and the trivial or even to see that we must."[16] In 1963 James Conant studied 77 teacher education programs; his conclusions regarding foundational studies could actually be used to summarize our findings today:

> In the majority of the institutions I visited, the future teacher starts his or her sequence of professional courses by taking the same introductory courses. . . . Frequently the type I describe as "eclectic" carries the label "foundations of education." Those in charge . . . often attempt to patch together scraps of history, philosophy, political theory, sociology, and pedagogical ideology. . . . Occasionally, to be sure, one encounters a mature scholar who has ranged so broadly and so deeply over the fields of philosophy and social science that he can . . . give his students a clear and exciting picture. . . . I have rarely talked with students or school teachers who had good words to say for an eclectic foundations course. Perhaps the kindest word used to describe most of these courses was "pathetic."[17]

In the last two decades, a base of literature has accumulated that directly or indirectly confirms the findings of our study and of previous studies. For example, we have located more than 30 articles and essays that refer to or presume a serious erosion, decline, decay, or demise of foundational studies in teacher education programs.[18]

As I suggested at the outset, the wrong conclusion to draw from the perceived irrelevance, marginality, and disintegration of foundational studies is that such studies are actually irrelevant. The relevance of foundational study is perennial. But our houses of education and the educator preparation programs within them are in serious trouble. Just repairing the foundations will not suffice; sturdy construction must extend from floor to ceiling. Issues such as those suggested in our interview questions are present in every room. Technique is not enough; wisdom, prudence, judgment, and responsible action must be integrated with method and experience in the education of educators. The means by which children develop and learn are crucial, but so are the ends.

Foundations courses are easy targets. We make them visible and vulnerable in a society that has a penchant for separating thought from action. Is it any won-

TABLE 1.
Student and Faculty Perceptions of the Contribution and Interest Level of Typical Courses in Teacher Education

Course Type	Contribution* Students	Contribution* Faculty	Level of Interest** Students	Level of Interest** Faculty
Foundations	3.7	4.1	3.6	3.0
Educational psychology	4.9	5.1	4.7	4.1
General methods	5.2	4.9	4.6	4.2
Subject-based methods	5.7	6.0	5.3	5.5
Student teaching	6.2	6.6	6.6	6.6

*Figures are means on a seven-point scale (1 = no contribution at all; 7 = a very great contribution).
**Figures are means on a seven-point scale (1 = not at all interesting; 7 = extremely interesting).

TABLE 2.
Student and Faculty Recommendations for Redesigning the Teacher Education Program

Course Type	More Emphasis %	Same Emphasis %	Less Emphasis %	Eliminate %
Foundations				
Students	16	54	22	8
Faculty	18	53	25	4
Educational psychology				
Students	29	59	10	2
Faculty	32	58	10	0
General methods				
Students	35	55	8	2
Faculty	22	50	21	7
Subject-based methods				
Students	53	43	3	1
Faculty	52	38	9	1
Student teaching				
Students	44	55	1	0
Faculty	47	50	3	0

TABLE 3.
Student Ratings of the Interest Level of Education Courses Compared to Other Courses

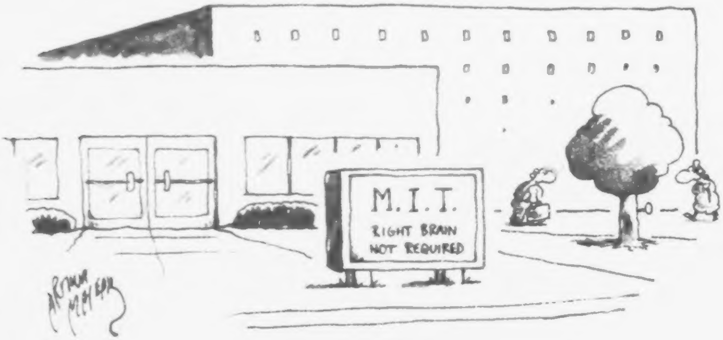
Course Type	More Interesting %	About the Same %	Less Interesting %
Foundations	21	42	37
Educational psychology	40	41	19
General methods	34	46	20
Subject-based methods	54	34	12
Student teaching	85	12	3

der that students consistently evaluate their student teaching as the most relevant and satisfying experience in the program? Is it surprising that even the best of foundations courses would be viewed as obscure and irrelevant in the press of "becoming" a teacher? We need to stop thinking about "courses" in foundations and start thinking about foundational study and experience. This pursuit is not something that should happen at the beginning, middle, or end of preparing to teach; rather, it is something that should be integrated throughout preservice instruction and practice teaching.

Instead of packing the whole experience into a single course, why not have students meet monthly throughout their entire programs for several hours of concentrated study and critical discussion? Field experiences could be deliberately arranged to bear directly on historical, philosophical, and sociological studies. We could design reflective seminars in which students could discuss critically their daily experiences in schools and relate them to their foundational studies. As a number of educators have suggested, the use of the case study method (as in law school) could ground critical analysis and discussion in the realities of school practice.[19] These suggestions, of course, have implications for the whole of the preservice curriculum.

TWENTY-FIVE YEARS ago a young teacher-to-be sat with his fellow students in the Royce Hall auditorium on the UCLA campus. Together, the class watched Professor George Kneller pace back and forth across the stage as he lectured on the foundations of education. He was a great speaker, clearly enthusiastic and knowledgeable about his field. This was a solid course, not a miscellaneous array of Dewey, drugs, and dos and don'ts in the classroom. Idealism, realism, pragmatism; epistemology, axiology, metaphysics, logic; perennialism, progressivism, essentialism, reconstructionism . . . facinating ideas that often echoed in the background of the young man's thoughts as he worried about his lesson plans and upcoming student teaching assignment. He also worried about the whole idea of teaching and about whether he had really made the right decision. And what in the world did this course have to do with any of it, anyway?

Etched in large letters across the top of the stage were these words: "Education is learning to use the tools which the race has found indispensable." Those words etched themselves in the young man's brain as he gazed about the auditorium during the 20-week semester. What *were* those tools, he wondered. Now, of course, I know what Ernest Carroll Moore had in mind. But much more could have been done to make it clear to me then.



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10. See, for example, Phyllis J. Edmundson, *The Curriculum in Teacher Education* (Seattle: Center for Educational Renewal, University of Washington, Study of the Education of Educators Technical Report No. 6, 1989); and Roger Soder, *Students and Faculty in Teacher Education: Views and Observations* (Seattle: Center for Educational Renewal, University of Washington, Study of the Education of Educators Technical Report No. 8, 1989).

11. Soder, pp. 58-64.

12. One of the most popular texts for these courses appeared to be James William Noll, *Taking Sides: Clashing Views on Controversial Educational Issues* (Guilford, Conn.: Dushkin Publishing Group, 1987). This anthology of reprints is updated every two years or so; a fifth edition came out in 1989.

13. Soder, pp. 58-67.

14. Edmundson, pp. 45-67.

15. Special thanks are due Kris Minelga for assisting in this review of the literature.

16. Paul Woodring, "The Decline of Educational Philosophy," *Phi Delta Kappan*, October 1958, p. 6.

17. James B. Conant, *The Education of American Teachers* (New York: McGraw-Hill, 1963), pp. 126-27. See also his descriptions of social foundations courses provided in Appendix J, pp. 266-67.

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The Function of the Peer Group in Teacher Socialization

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By design and by default, great numbers of future teachers are being socialized into the belief and practice that teaching is largely an isolated and individualistic activity, rather than a shared enterprise, the author maintains.

BY ZHIXIN SU

MANY STUDIES have cited the function of the peer group as an important mechanism for socializing new members of a profession.[1] In some organizations, groups of peers who entered the profession earlier help to socialize groups of newcomers. When this occurs, not only do the new recruits become socialized, but those who serve as role models find their own values reinforced. Moreover, individual changes in attitudes, values, and motives are based on a group consensus. The peer group can also help to reduce strain and alleviate tension, thereby easing an individual's entry into the organization or profession.

For the Study of the Education of Educators (SEE), we designed both survey items and interview guides to explore and examine the formation of peer groups and the significance of peer relationships among teacher candidates. The following discussion is based on findings from the survey of all 29 selected teacher training institutions in our sample and on interview data I collected in visits to 11 of

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Illustration by Mario Noche

the 29 institutions. I interviewed a total of 101 people – 45 graduating teacher candidates, 40 teacher education faculty members, and 16 cooperating teachers in schools in which the candidates were student teaching.

FORMATION OF PEER GROUPS

In nearly all the programs we visited in the SEE, we found little evidence of the formation of a strong community among education students as a whole. However, there was a sense of group cohesion among students in certain subprograms. Those in early childhood education, in elementary education, and in middle-grades education, for example, often formed small groups among themselves. Usually students in these groups went through the same courses and seminars; sometimes they were placed in clusters for student teaching. There were also national and regional professional associations trying to involve these students in group activities.

However, most of the secondary education students in our sample had no sense of group identity as education students, although there were such departmentalized cliques as math clubs for students in math education. Secondary education students generally tended to see themselves as belonging more to their subject-matter disciplines than to schools of education. A secondary education student from a major state university lamented that she could not relate to any of the other education students in her training program. The classes were too large, and there were no organized activities for students, she said. She seldom saw the same faces twice in the education classes she attended. Although she tried to suggest to other students that they should get together after class, she got no response. Such a feeling of loneliness is not uncommon among secondary education students in large public universities.

Nor was there much communication and interaction between elementary and secondary education students. "They don't rub elbows together," observed a professor at a major public university. A similar gap existed between undergraduate education students and graduate education students. Although the undergraduate students I interviewed expressed the wish that they could make friends with graduate students, the graduate students preferred to make friends among themselves. Age and experience determined with whom they chose to work and study, they said. By the same token, students who enrolled in a program in a given year knew little and cared less about students who had enrolled in the previous year or who would enroll in the following year.

Survey data regarding peer relationships among the students support the findings from the interviews. Table 1 summarizes information about students' acquaintance with one another in their training programs. Of the 2,787 students who responded to the surveys, only 11% claimed to know most of the other students in their programs, 21% had made friends and many acquaintances, nearly 37% had made friends and some acquaintances, but nearly 27% of the students had made only some casual acquaintances. Approximately 4% of the students had not really come to know any of their peers very well.

When examined by institutional type,[2] we found that the percentage of students who knew most of their fellow students was *smallest* in the regional public universities, the campuses with the largest student enrollments in education. Moreover, elementary education students knew one another better than did secondary education students, and traditional undergraduate students (those 24 years of age and younger) were better acquainted with one another than were nontraditional students (those 25 years of age and older) enrolled in postbaccalaureate programs.

As the students progressed through their training programs, they tended to feel more like members of a larger group of people who would become teachers.

TABLE 1.

Students' Acquaintance with One Another

	By Institutional Type						
Extent of Acquaintance	Flagship Public %	Major Public %	Regional Public %	Major Private %	Regional Private %	Lib. Arts Private %	Overall %
Do not know anyone well	2.6	6.2	4.6	2.6	6.0	2.7	4.4
Some casual acquaintances	18.2	29.2	28.7	21.8	30.1	31.3	26.6
Friends and some acquaintances	37.1	34.3	37.8	41.0	33.7	33.0	36.8
Friends and many acquaintances	23.5	18.7	22.0	19.2	16.3	13.4	21.1
Know most students	18.6	11.6	6.8	15.4	13.9	19.6	11.0
N	571	353	1,507	78	166	112	2,787

	By Level		By Age	
Extent of Acquaintance	Elementary Education %	Secondary Education %	Traditional (24 or Younger) %	Nontraditional (25 or Older) %
Do not know anyone well	3.2	6.3	2.6	7.4
Some casual acquaintances	21.8	33.8	21.8	34.8
Friends and some acquaintances	38.1	34.8	37.1	36.5
Friends and many acquaintances	26.2	13.7	24.9	14.8
Know most students	10.7	11.4	13.7	6.6
N	1,659	1,070	1,746	1,033

Once again, elementary education students and traditional undergraduate students seemed to have stronger feelings of togetherness than did secondary education students and nontraditional students.

Some patterns emerged when we examined the frequencies of both formal and informal contacts among the students. Nearly 25% of the students had never met formally outside of regular classes with other groups of students in their training programs, and about 17% of the students had never met their fellow students informally outside of their regular classes.

The situation in major private universities and in flagship public universities seemed to be better than that in the other four types of institutions under study. However, the overall percentage of students who reportedly had gathered together outside of their regular classes at least once a day was very small: only 2.2% on a formal basis and only 7% informally. In general, the students in our sample seemed to meet informally more frequently than formally. In addition, elementary education students had more frequent contacts among themselves than did secondary education students, and traditional students gathered together more often than nontraditional students.

SIGNIFICANCE OF PEER RELATIONSHIPS

Most persons whom I interviewed, both teacher candidates and teacher educators, did not seem to be disturbed by the lack of a sense of community or by the weakness of peer groups in their training programs. In our surveys, we asked both students and faculty members to assign importance to a list of 11 selected sources of influence in socializing students. Both groups considered peer influence to be not very significant, although the faculty members assigned it more importance than the students did. Students ranked peers low as a source of influence – third from the bottom of the list. Not surprisingly, the most significant sources of influence identified by both students and faculty members were student teaching experiences and cooperating teachers in practice schools.

The interview data indicated that, in general, younger students, elementary education students, beginning students and those who lived close to one another on or near campus tended to assign more importance to peer support than older students, secondary education students, and those who went home immediately after class. The students reported that they could get some support and comfort from peers, but they said that they did not rely on peers as a significant source of influence on the development of their educational and professional beliefs, attitudes, and values. Perhaps a student in a major private university put it best by asserting that peer influence serves a "reassuring function" for teacher candidates. Our findings confirmed earlier observations by Ann Karmos and Carol Jacko that peers play only a somewhat limited role in providing emotional support for teacher candidates.[3]

There was a singular exception in the programs we visited. At a small private liberal arts college, elementary, secondary, graduate, and undergraduate education students were all brought together as a close-knit group in the same seminars and group gatherings. Peer interactions in this program were frequent and intense. Both students and faculty members described the atmosphere as very pleasant, relaxed, friendly, and supportive. Students seemed to enjoy being there; in addition to taking courses and student teaching together, they also had fun together. Some students became very close friends. Naturally, both faculty members and students at this school valued peer relationships and support to a much greater extent than did individuals interviewed at other teacher training institutions. This example demonstrates that it is possible to build strong communities among those who are preparing to become tomorrow's teachers.

TABLE 2.

Faculty Perceptions of Programs' Efforts to Make Beginning Students Feel Part of a Community

	By Institutional Type						
	Flagship Public	Major Public	Regional Public	Major Private	Regional Private	Lib. Arts Private	Overall
Extent of effort*	4.4	3.6	4.3	5.6	4.9	5.3	4.4
Total N	189	138	424	62	80	39	932

*Figures are means on a seven-point scale of increasing effort.

INTERPRETATION AND IMPLICATIONS

The general absence of strong peer groups and strong peer relationships among teacher candidates explains in part the lack of a shared moral vision, which we found to be characteristic both within and across institutions.[4] The survey data suggest that there were few opportunities for teacher candidates to come together to reflect on and discuss critical issues in education, to say nothing of reaching common understandings.

The interview data further revealed that during the limited time that some of the students did spend together, they more often focused on practical matters and real problems that they encountered in schools – teaching materials, testing methods, pupils' behaviors and attitudes, relationships with pupils' parents, and such personal concerns as sports and dating. As a result, what the students developed in the process of socialization were individual utilitarian perspectives on teaching and a focus on what would work to solve various immediate problems, rather than a shared understanding of the possible ethical and long-range consequences of classroom actions.

There appear to be several reasons for the lack of strong influence by the peer group and for the generally careless attitudes toward this lack among teacher candidates. First, as shown by data summarized in Table 2, teacher training programs in our sample did not expend a great deal of effort in helping beginning students to feel part of a community, although private institutions appeared to try harder than did public institutions. Moreover, Table 3 shows that, in both public and private institutions, about 42% of teacher candidates never attended any orientation meetings with fellow students at the beginning of their programs. About 32% attended only one orientation meeting with their peers upon entry. The situation seemed to be a little better in elementary education programs than in secondary education programs.

TABLE 3.

Frequency of Orientation Meetings That Students Attended Together at the Beginning of Their Programs (Student Perceptions)

	By Institutional Type						
Frequencies	Flagship Public %	Major Public %	Regional Public %	Major Private %	Regional Private %	Lib. Arts Private %	Overall %
0	50.3	58.7	32.3	36.7	51.2	59.5	41.6
1	26.3	27.8	36.5	22.8	25.6	26.1	31.9
2	15.2	8.4	20.1	13.9	12.2	5.4	16.4
3	4.0	3.7	5.3	11.4	4.9	4.5	4.9
4	0.5	0.0	1.3	2.5	1.8	1.8	1.1
5 or more	3.7	1.4	4.5	12.7	4.3	2.7	4.1
N	571	356	1,515	79	164	111	2,796

	By Level	
Frequencies	Elementary Education %	Secondary Education %
0	38.1	46.7
1	32.7	31.3
2	17.3	15.0
3	5.5	3.7
4	1.4	0.6
5 or more	5.0	2.7
N	1,668	1,070

The interview data also indicated that teacher education programs made few deliberate efforts to treat incoming students as a class, although the approach has been widely adopted by other professional training institutions, such as business colleges, medical schools, and law schools. In recent years, some teacher education reformers have proposed the use of this approach,[5] and certain exemplary teacher education programs actually organized their trainees into consistent groups.[6] However, most teacher candidates still go through their programs individually.

Several faculty members interviewed in this study recalled that, at one point or another, their programs did begin to try treating incoming groups as distinct classes, but such efforts were usually not sustained. Therefore, the first implication of the SEE for reform related to the socialization of teachers is a call for deliberate and sustained efforts on the part of teacher training programs to use the class-based approach. Once an organizational structure of peer support is established, members of each year's class are likely to begin to share experiences, discuss common and uncommon problems, and arrive at enlightened understandings of the critical issues in teaching and schooling.

A major problem in making sustained efforts to treat students as distinct classes is the short duration of teacher training programs. Findings from our study reveal that some programs last less than a year. The students interviewed complained that they simply did not have sufficient time to build lasting ties and to make permanent friends. Students in early childhood education and elementary education programs were able to form more supportive bonds than were secondary education students, because they usually spend more time together. An important reason for the presence of a strong peer culture among students in medical schools is certainly the duration of the program. The situation in teacher education can be improved by early recruitment of students into socialization experiences and by an increase in the number of hours students are in contact with one another during their training.

Another obstacle to the formation of strong peer groups among education students is the fact that a great number of those students (two-thirds or more in some institutions we visited) work part-time, and some even work full-time in order to support themselves while they attend the university. While many students did not feel the need to socialize with their peers in teacher training after class, many others reported that they simply had no time for socializing. By contrast, medical students usually do not hold part-time jobs while they are in school. Instead, they devote eight or more hours to their program every weekday, they work and study together in the labs and on the wards of teaching hospitals, and they are likely to spend many evenings and weekends together as well.[7]

In the future teacher candidates should probably be required to invest more time and energy in their professional training than in their part-time work. More scholarships for students and more funding for teacher education programs are essential if this problem is to be solved. Less than 3% of the education students in our sample had scholarships as their primary source of income. Nearly 20% of the students had to rely on themselves as the breadwinners and tuition payers.

Living arrangements are also a reason for the lack of a sense of community among teacher candidates. According to our survey data, more than 70% of the students in our sample commuted to school rather than living in dorms or in houses or apartments on or near the campus. Of course, there is the expected difference between age groups. The younger, traditional undergraduate students tended to live on campus more often than the older, nontraditional students, 90% of whom commuted. The interview data showed that, for those who shared accommodations with students in the same field, peer influence seemed to be more significant. Clearly, efforts should be made to encourage education students to live close to their peers wherever possible, either on or off campus. For nontraditional students, informal gatherings should be made regular events so that they can have the opportunity to develop a sense of collegiality with peers.

Moreover, as Robert Friebus found, the lack of a strong peer culture among teacher candidates is partially due to the poor articulation between training on the college campus and practica in school settings.[8] In general, we found little peer-group solidarity carried over from classroom experiences into student teaching.

In some of the programs we visited, teacher candidates started out as a group, and peer influence was stronger at the beginning of their programs. However, as they progressed through individual specialties and took different courses, students became more separated from one another, with little access to group support. When the time for student teaching came, some of the programs tried to place student teachers in clusters. Nonetheless, most student teachers lost contact with those with whom they had studied earlier.

In addition, even if assigned to the same cooperating school, the student teachers in our sample did not necessarily communicate with one another, a pattern that echoes the isolated situation of their cooperating teachers. The student teachers reported that, even at this stage of their programs, getting a good cooperating teacher and being assigned to a good school for student teaching were more important than staying with peers. Therefore, the placement of student teachers was arranged on the basis of individual needs and geographical convenience. Some of the student teachers we interviewed felt isolated from their peers and friends, but they said that they were just too busy to reach out to make contact.

We need to rebuild the broken bridges of communication between the teacher training institutions and the schools. Moreover, we need to make organizational arrangements to allow student teachers to interact extensively with their peers, with their supervisors from both the college and the schools, and with other teachers and administrators at the cooperating schools.

The last – but certainly not the least important – reason for the lack of a strong peer culture in teacher socialization is the value American society places on individualism. The organization of the training programs we visited, especially the structure of the student teaching experiences, tended to encourage the development of individualism. For decades, teaching in American public schools has been known to be a lonely and isolated activity.[9]

Such an individualistic mode also characterizes the initial socialization experiences of teachers. Marooned in their "egg-crate" classrooms, novice teachers have been compared by Dan Lortie to Robinson Crusoe.[10] Data from our surveys and interviews indicate that students in the programs under study did not have many collegial interactions – formal or informal – in their foundations and methods courses or in their student teaching. In their beginning teaching experiences in cooperating schools, the student teachers often found themselves physically isolated in a "sink-or-swim" situation.

The image of student teachers presented by the current study is that of a group of individuals learning to teach on their own and depending on their individual motivation and initiative. Overcoming this kind of isolation and developing a sense of shared experience and intellectual and professional community should be high on the agenda for change in teacher education. Teaching is a noble but draining profession. Teachers need peer support to carry out their mission and to stay the course through good times and bad.

To conclude, findings from the SEE suggest that the function of the peer group in the socialization of teachers is in general very weak. Teacher candidates are not encouraged by their programs to develop a strong peer culture. By design and by default, great numbers of future teachers are being socialized into the belief and practice that teaching is largely an isolated and individualistic activity, rather than a shared enterprise.

This problem cannot be solved in one day – or in one way. But making deliberate efforts to build ties and create communities among teacher candidates, increasing the opportunities for students to congregate, establishing more scholarships and assistantships for teacher candidates, encouraging traditional teacher candidates to live close to one another on or near campus, helping nontraditional students to gather with their peers more often, keeping teacher candidates in the same peer group throughout their training (especially into student teaching), including teacher candidates in the larger community of teachers in cooperating schools, and combating individualism and teacher isolation are steps that the profession can take immediately.

When teacher candidates experience their professional socialization as a close-knit and caring group, rather than as disassociated individuals, they will have the opportunity to reach common understandings about the nature of education, schooling, and the teaching profession. And they will begin to understand and appreciate the democratic mode of associated living, a mode that John Dewey long ago envisioned for American schools and society.

---

1. See, for example, Howard S. Becker et al., *Boys in White* (Chicago: University of Chicago Press, 1961); William M. Evan, "Peer Group Interaction and Organizational Socialization: A Study of Employee Turnover," *American Sociological Review*, vol. 28, 1963, pp. 436-40; and Virginia L. Olesen and Elvi W. Whittaker, *The Silent Dialogue: A Study in the Social Psychology of Professional Socialization* (San Francisco: Jossey-Bass, 1968). The study I am reporting in this article is part of the Study of the Education of Educators. For a full report of my findings, see Zhixin Su, *Exploring the Moral Socialization of Teachers: Factors Related to the Development of Beliefs, Attitudes, and Values in Teacher Candidates* (Seattle: Center for Educational Renewal, University of Washington, Study of the Education of Educators Technical Report No. 7, 1989).

2. The typology of institutions is based on the Carnegie classification of institutions of higher learning. For further clarification of the typology, see Kenneth A. Sirotnik, *Study of the Education of Educators: Methodology* (Seattle: Center for Educational Renewal, University of Washington, Study of the Education of Educators Technical Report No. 2, 1989).

3. Ann H. Karmos and Carol M. Jacko, "The Role of Significant Others During the Student Teaching Experience," *Journal of Teacher Education*, vol. 28, no. 5, 1977, pp. 51-55.

4. For a discussion of the SEE findings regarding the basic educational beliefs, attitudes, and values, see Su, pp. 75-151.

5. See, for example, University of California Review Committee on Education, *Report of University-Wide Programs* (Berkeley: University of California, 1984), p. 9.

6. Kenneth R. Howey and Nancy L. Zimpher, "Case Studies of Elementary Teacher Preparation – Programs in Six Schools and Colleges of Education," paper presented at the annual meeting of the American Educational Research Association, Washington, D.C., April 1987.

7. Howard Becker and Blanche Geer, "Student Culture in Medical School," *Harvard Educational Review*, vol. 28, 1958, pp. 70-80.

8. Robert J. Friebus, "Agents of Socialization Involved in Student Teaching," *Journal of Educational Research*, vol. 70, 1977, pp. 263-68.

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10. Dan C. Lortie, "Teacher Socialization: The Robinson Crusoe Model," in National Commission on Teacher Education and Professional Standards, *The Real World of the Beginning Teacher* (Washington, D.C.: National Education Association, 1966).

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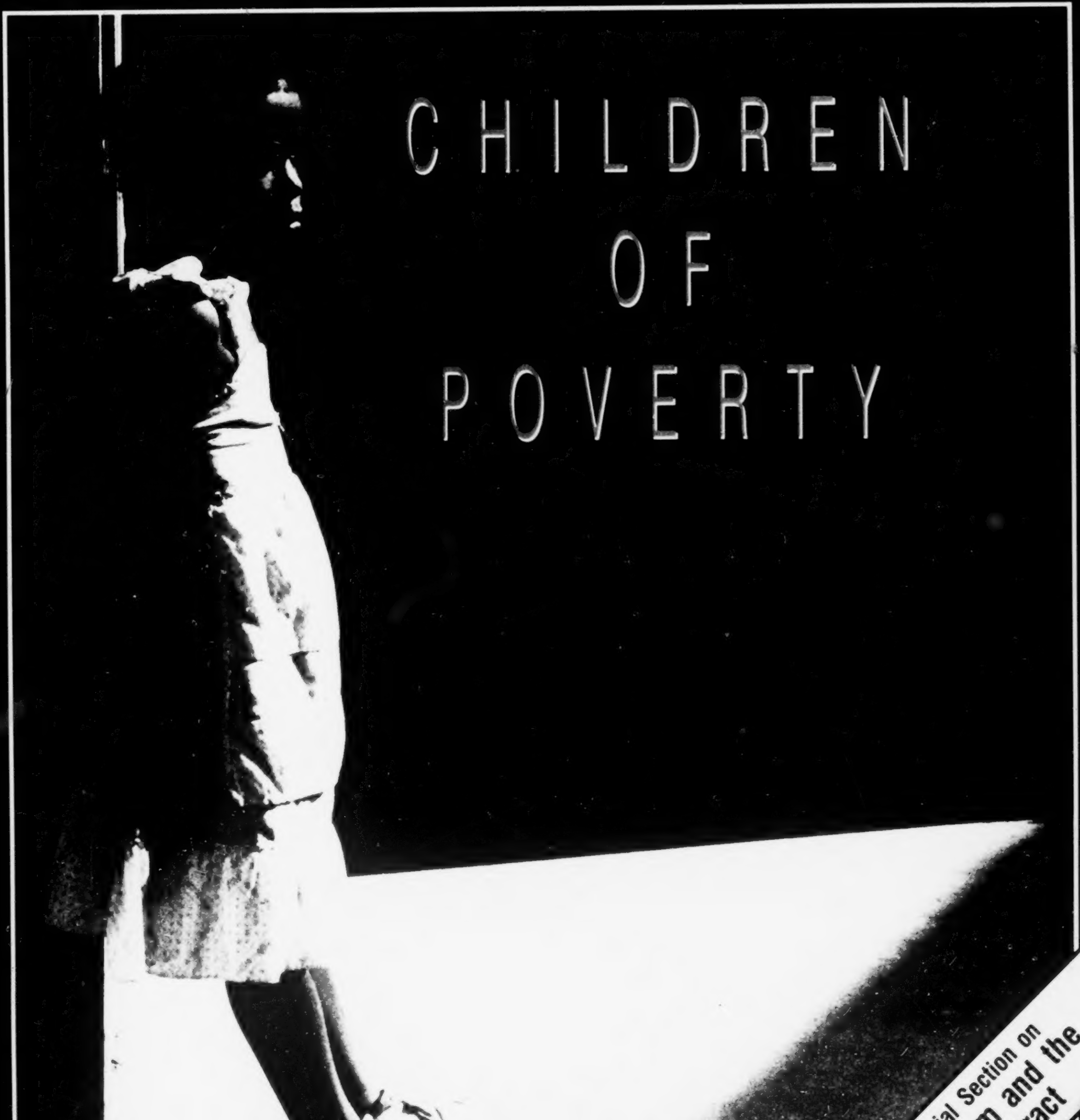

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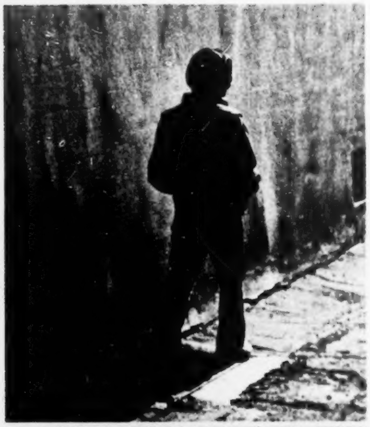

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THE EDITOR'S PAGE

Good News/Bad News

THIS ISSUE of the *Kappan* contains both good news and bad. The good news – which you'll find in the special section on school restructuring – is that the entire education community is finally joining hands to make schools more effective for the young. Instead of blaming one another for inadequate outcomes while carrying on business as usual, teacher unions, school administrators, and school boards in some locales are working with parents and community leaders to reform the schools by re-forming them. The schools in these communities are undergoing not simple cosmetic changes, but fundamental structural ones that are tailored to local conditions and local needs. Such cooperation can serve as a model for the rest of us.

The bad news is that school restructuring will not be sufficient to carry the day. Oh, we have some ideas on how to deal more effectively with the children of poverty in our classrooms, as Michael Knapp and Patrick Shields point out in this issue. We have some ideas, too, on how to deal more effectively with homeless children; Maria-Luisa González describes one such program in Dallas.

But the schools alone cannot resolve the devastating problems that poverty poses for some 30 million Americans, many of them children – problems that are detailed in this month's *Kappan* Special Report. To cope effectively with the needs of the children of poverty will require a shift in national priorities.

In the 1960s the nation declared a War on Poverty, but today we seem instead to be waging war on the poor. According to the Children's Defense Fund, spending on the military has increased by 37% since 1980, and spending on the national debt has increased by 81%. But spending on all programs for low-income families has *dropped* by 2%. Meanwhile, according to the Census Bureau, the average family income (in constant dollars) of the poorest one-fifth of Americans fell from $5,429 in 1979 to $5,107 in 1987.

In the last decade we comfortable Americans have attended to our own well-being and blamed the victims who have fallen by the economic wayside. Though our manufacturing base has shrunk and low-paying service jobs have filled the gap, we have tended to think of the poor as shiftless and hopeless – unable or unwilling to hold down a job. In reality, many of the poor are *employed* – but without hope, because they are unable to afford basic necessities on a minimum wage. And the problems of poverty have created enormous challenges for the schools in virtually every community, because so many poor Americans are children.

It's time for this nation to start assessing public policy in terms of how well it meets the needs of the young. America needs a continuum of programs, starting with prenatal care for low-income women and adequate medical care, nutrition, and developmental education for their children. It needs to provide easy access to a variety of social services that can help poor families cope with the many problems that spin out of poverty. It needs to provide the children of poverty with incentives to become educated – prospects for decent jobs or for financial aid for postsecondary education. And all these things will cost money.

Jonathan Kozol notes that "only when it comes to human justice do we question the utility of cash. We never speak of throwing money at the Pentagon. No. We 'allocate' money to the Pentagon. We talk about 'throwing' money at anything that has to do with human pain."

Educators must continue to restructure the schools. But we must also speak out for the children served by those schools. Clearly, a nation that does not invest in its children does not love itself. – PBG

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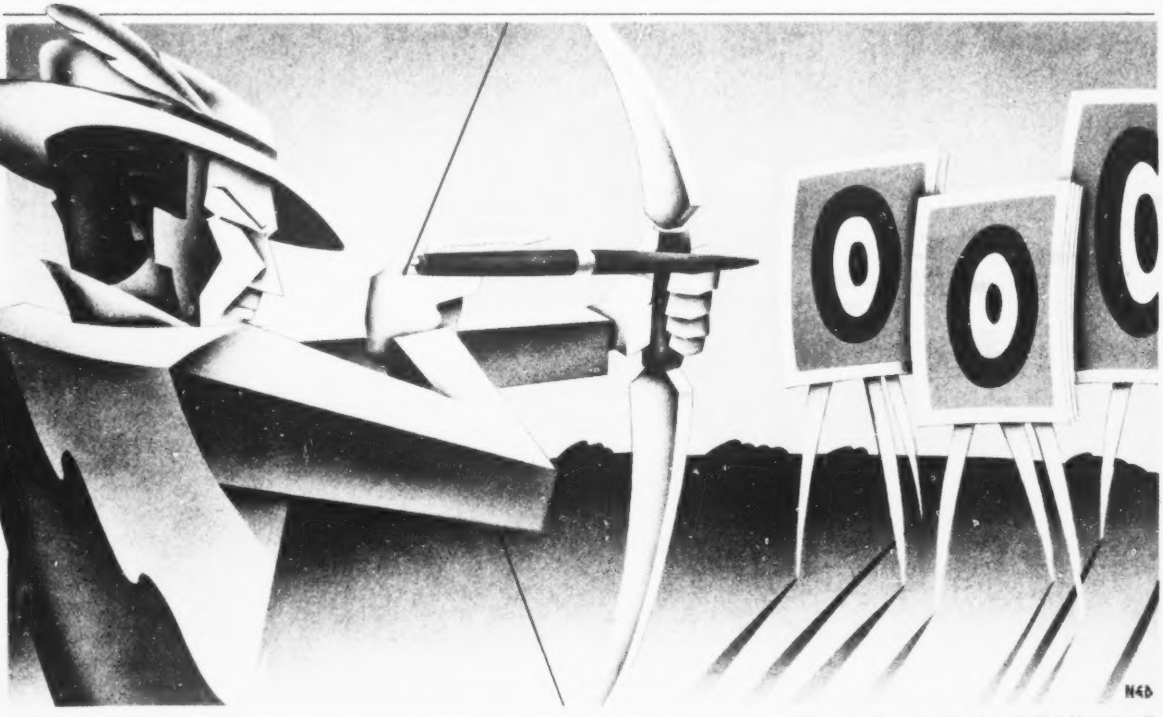
Writing for Education Journals



Mr. Henson discusses the latest findings from his biennial survey of education editors. Those who wish to publish in professional journals would do well to heed his advice.

BY KENNETH T. HENSON

AFTER I graduated from college, I moved 500 miles to work with William Van Til, a decision I've never regretted. Within a year I found myself seated in his class on "Writing for Professional Publication."

Several years later I began holding brown-bag luncheon discussions to help doctoral students develop the writing skills that they would need in their later professional lives. These seminars led me to offer my own graduate course on "Writing for Professional Publication." (Like Van Til's classes, mine had about as many faculty colleagues in attendance as graduate students.) And the course led me to develop a workshop on the subject that I've conducted for more than 60 audiences. Participants arrive loaded with specific questions to which they are determined to find answers. It is these questions that keep me on track and keep me struggling to stay one step ahead of the group.

KENNETH T. HENSON (Eastern Kentucky University Chapter) is dean of the College of Education at Eastern Kentucky University, Richmond. This article is an update of earlier articles that appeared in the May 1984, April 1986, and June 1988 issues of the Kappan.

My technique for staying ahead is simple. Periodically, I send a questionnaire to a number of education journals. To disseminate the findings widely, I prepare an article for the *Kappan*. This is the fourth such article to appear in this jour-

Illustration by Ned Shaw

nal since 1984. The information that appears in Table 1 comes from a mailing to 54 journals; 53 responded, for a 98% rate of return.

Participants in my workshops often ask, How do I know to which journals to target my manuscripts? I tell them first to decide what they want to achieve and then to choose a journal that matches their goals. Some people write to share their knowledge with as many people as possible; they need to publish in journals with large circulations. Some wish to write for university professors and researchers. These writers should not be writing for journals that are read primarily by practitioners.

The audiences for the journals I surveyed range from as few as 200 to as many as 150,000; four-fifths of the journals have fewer than 10,000 readers, and half have circulations of between 5,000 and 10,000. Two-thirds of all readers are university personnel.

I found that 94% of the 53 journals in my survey publish at least some articles that report on research of some kind. For 23% of the journals, more than 90% of the articles published report on research. Clearly, you can improve your chances of acceptance by reporting some research data. However, when writing for journals whose audiences consist largely of practitioners, avoid the formal research article format.

The institutional reward system of our colleges and universities may dictate that some writers publish in "refereed journals." Since what constitutes a *refereed journal* varies widely from journal to journal, I have devised a simple three-point scale to reduce the confusion. I assign one point to each of three criteria that I consider important in refereeing. If manuscripts are regularly sent out of the editorial offices for review by peers (or if an editor uses a combination of in-house and field-based review), I assign the journal one point. If the reviewers do not know the name of the author or the institution with which the author is affiliated, I assign the journal one point. If the journal furnishes its reviewers with a rating instrument, I assign the journal one point. The total for each of these journals is reported in Table 1.

Forty-one percent of the journals in my survey scored a full three points on my refereeing scale; 40% scored two points; 8% scored one point; 8% failed to meet any of the criteria. Since I conducted this survey two years ago, three formerly nonrefereed journals have attained refereed status. I should note that merely meeting these criteria does not insure quality. For example, one author's purposes for writing may best be met by publishing in a nonrefereed journal that is read by a great many practitioners, while another's purpose can better be served by publishing in a refereed journal that is read by a smaller number of researchers.

Perhaps the question that aspiring writers most frequently ask is, What is the rejection rate of a journal? Rejection rates among these journals range from 30% to 96%. Two-thirds of the journals reject at least two-thirds of the manuscripts they receive, and nearly one-third (31%) reject at least 90%. Nevertheless, 13% of these journals accept at least half of the manuscripts submitted.

To help those who attend my workshops to increase their personal acceptance rates, I asked editors how many themed issues they plan each year. About half of these journals (55%) dedicate all or part of one or more issues a year to themes, and half of all the articles in these theme-using journals (45%) are related to a theme. By reading these journals regularly, writing on an upcoming theme, and timing the submission of a manuscript so that it reaches the editors before the announced deadline, you can significantly increase your chances of getting into print. One journal, on whose publications committee I have served for several years, plans both themed issues and general issues every year. The editors typically receive three times as many manuscripts for general issues as they receive for themed issues. The mathematics is simple: by writing for the themed issues, you have three times the chance of being published in this journal.

The promptness with which an editor evaluates a manuscript is an important concern for all potential contributors. One of my workshop participants reported that a certain journal took eight years and three months to reach a decision on his manuscript. While awaiting the decision, he graduated, moved twice, and was promoted to associate professor. Finally, the editor reached a decision: the manuscript was rejected because "it does not offer a new view on the subject." This experience and the 11 letters that he wrote to the editor during the eight-year process were printed in the *Chronicle of Higher Education*. While this case must surely be a record for editorial irresponsibility, some journals do require more time than others to make publishing decisions.

The 53 editors who responded to my survey require from two days to one month to respond to query letters. Six journals require a month to respond to a letter. The average is about 10 days. As many as 45 days are required to acknowledge receipt of a manuscript.

As upper limits, these figures don't sound so bad. But once the manuscript has been received and acknowledged, the process slows down considerably. These editors take from two to 60 weeks to decide whether to accept or reject a manuscript. On the average, this decision takes about three months – or nine times as long as the average time required to respond to a query letter. This wide range suggests that, when selecting journals to which to submit manuscripts, you might wish to query the editor about his or her interest before sending a manuscript. It also suggests that, unless a journal has a shorter turnaround time, a writer should wait at least three months before inquiring about the status of a manuscript. Once having accepted a manuscript, these journals take between one month and two years to publish it. The average delay is seven months.

You should not be timid about contacting editors. Eighty percent of the editors who responded to my survey welcome inquiries. Twenty percent of them prefer phone calls over letters, 25% prefer letters, and 35% don't have a preference. Ten percent of the editors clearly state that they do not welcome either. Most editors face heavy workloads and deadlines. So all communication, whether by phone or by mail, should be kept brief.

Few beginning authors realize the importance of making their manuscripts fit the requirements of the target journals. Put bluntly, editors will not alter their journals to fit the design of a manuscript. I know of one editor who won't even send a manuscript out for review if it violates any referencing rules. Seventy percent of these journals require APA (American Psychological Association) style; the others use the University of Chicago style manual. Do not submit a manuscript printed on a dot-matrix printer without first checking with the editor; 40% of the editors I surveyed *do not* accept dot-matrix copy, and many of the others prefer letter-quality copy.

In addition, a manuscript should correspond to a journal's length require-

TABLE 1.
Characteristics of a Selected Sample of Education Journals

	Number of Readers	Contributors Who Are University Personnel (%)	Refereed	Research Articles (%)	Theme Issues per Year (%)	Acceptance Rate (%)	Days to Answer Queries (Avg.)	Days to Acknowledge Receipt of Ms. (Avg.)	Weeks Required for Decision (Avg.)	Months Required for Publication (Avg.)	Preferred Length (in Ms Pages)	Min./Max. Pages	Number of Photocopies Preferred	Required Style	Accept Dot-Matrix	Effect of Photos on Acceptance	Welcome Query Letters	Welcome Phone Calls
Academic Therapy	5,000	60	3	10	20	15	2	2	7	9	10-12	—/20	2	APA	Yes	Likely	Yes	No
Action in Teacher Education	3,500	75	3	25	50+	30	7	14	12	10	8	4-15	2	APA	Yes	None	No	Yes
American Biology Teacher	7,000	50	3	60	0	60	5	2	8	9	10	1-18	2	APA	No	Possibly	Yes	Yes
American Secondary Education	3,000	90	1	10	0	40	7	7	7	4	9	—	1	Campbell	Yes	None	Yes	Yes
Child Development	8,500	90	2	95	15	20	1	0	12	12	15	—	3	APA	No	None	Yes	—
Clearing House	2,500	90	3	50	10	50	7	8	12	6	9	—	0	Chicago	No	None	Yes	—
College Student Journal	1,000	50	2	20	0	33	30	45	6	10	7	4-20	1	APA	Yes	Possibly	Yes	Yes
Comparative Education Review	2,400	80	2	90	25	15	5	5	9	8	30	20-35	3	Chicago	No	None	Yes	No
Computing Teacher	12,000	50	3	20	10	10	7	2	12	5	9	3-16	1	APA	Yes	None	Yes	Yes
Contemporary Education	1,000	75	2	25	90	5	7	7	5	12	12	1-20	3	APA	No	Possibly	Yes	—
Core Teacher	200	50	0	25	10	30	7	7	4	6	7	—	0	Any	Yes	Possibly	Yes	Yes
Creative Child & Adult Quarterly	—	80	1	30	25	40	21	21	40	12	10	6-18	2	APA	Yes	Possibly	Yes	—
Delta Pi Epsilon Journal	8,000	—	2	85	0	23	18	18	14	6	12	7-17	4	APA	Yes	None	Yes	Yes
Eastern Education Journal	1,000	90	1	40	50	60	30	30	12	4	10	5-20	3	APA	Yes	Likely	—	Yes
EKU Educational Review	1,700	80	3	75	10	50	5	5	8	3	12	8-15	2	APA	Yes	None	Yes	Yes
Education	3,000	90	2	20	0	33	30	45	6	10	9	4-20	1	APA	Yes	Possibly	Yes	—
Educational Forum	50,000	75	3	10	0	10	5	5	10	5	15	—	3	Chicago	Yes	None	No	No
Educational Horizons	15,000	80	2	5	95	17	30	2	24	12	11	1-15	2	Chicago	Yes	Possibly	Yes	Yes
Educational Leadership	135,000	50	3	5	90	5	5	3	4	12	9	1-25	1	APA or Chicago	No	Possibly	No	No
Educational Perspectives	1,000	75	2	5	100	5	13	13	4-6	—	10	6-20	2	Chicago	No	Definitely	Yes	Yes
Educational Psychology Review	500	100	3	0	25	50	10	10	15	7	10	—	2	APA	No	None	Yes	Yes
Educational Record	10,000	95	2	7	40	10	14	3	8	9	10	5-14	1	Chicago	No	None	Yes	Yes
Educational Technology	5,000	60	No	20	—	40	7	7	2	9	11	6-25	1	APA	Yes	Possibly	Yes	Yes
Elementary School Journal	5,600	95	3	99	40	5	2	1	8	11	30	—	3	APA	No	None	Yes	Yes
High School Journal	2,000	98	3	75	0	4	30	5	8	12	12	5-18	2	APA	Yes	None	Yes	—
Journal of Educational Research	3,200	Most	2	100	0	20	10	30	12	6	25	—/30	2	APA	No	None	Yes	Yes
Journal of Experimental Education	1,600	98	3	98	0	25	—	23	7	5	20	—	3	APA	Yes	None	Yes	—
Journal of Instructional Psychology	200	90	2	55	—	60	10	30	45	5	18	—	2	APA	Yes	None	Yes	No
Journal of Reading	20,000	60	3	25	12	25	3	7	10	6	15	1-25	4	Chicago	Yes	Possibly	—	—
Journal of Reading Behavior	2,000	85	3	99	0	20	—	0	12	5	—	—	4	APA	No	None	—	—
Journal of Res. in Science Teaching	2,000	90	2	99	0	50	14	14	20	5	—	—	2	APA	Yes	None	Yes	
Journal of Teacher Education	7,000	95	3	50	30	10	5	5	10	5	18	10-30	3	APA	No	None	Yes	Yes
Kentucky Reading Journal	1,000	85	2	40	0	70	30	7	12	3	10	5-15	3	APA	No	None	Yes	Yes
Middle School Journal	9,000	40	3	8	30	50	15	5	6	6	8	1-12	5	APA	—	None	Yes	Yes
NASSP Bulletin	40,000	60	No	15	—	18	5	2	4	12	14	8-18	1	Chicago	Yes	None	Yes	Yes
Peabody Journal of Education	2,400	80	3	—	100	100*	5	5	—	3	23	15-45	—	APA	No	Possibly	—	—
Perceptual & Motor Skills	7,000	—	2	90	—	35	—	—	4	1	—	—	3	APA	No	Possibly	Yes	—
Phi Delta Kappan	150,000	52	No	25	27	5	5	1	8	9	15	1-25	0	Chicago	Yes	Possibly	Yes	Yes
Planning & Changing	700	90	2	60	—	40	5	5	6	6	18	10-24	—	Chicago	Yes	None	Yes	Yes
Principal	25,000	25	No	10	15	5	30	42	60	5	9	5-12	1	Chicago	No	Possibly	Yes	No
Professional Educator	300	70	2	30	—	30	5	3	6	6	25	—	2	APA	Yes	None	Yes	Yes
Psychological Reports	7,000	—	2	90	—	35	0	0	4	1	—	—	3	APA	No	Possibly	Yes	—
Reading Improvement	2,000	50	—	20	0	33	30	45	6	10	9	4-20	1	APA	Yes	Possibly	Yes	Yes
Reading Research Quarterly	10,500	30	3	90	0	10	—	7	14	6	35	—	4	APA	No	None	No	No
Reading Teacher	48,000	60	3	25	12	11	3	7	9	6	15	—	4	APA	Yes	None	No	No
Review of Educational Research	14,000	75	3	100	0	5	3	3	8	5	50	None	3	APA	Yes	None	Yes	Yes
Social Studies	3,000	60	2	5	15	45	5	10	12	10	19	—	1	Chicago	No	Possibly	Yes	No
Teacher Educator	2,200	80	2	60	0	10	2	2	6	8	10	6-16	1	—	Yes	None	Yes	Yes
Teachers College Record	3,000	95	2	10	25	7	14	3	8	8	25	20-35	2	Chicago	—	None	Yes	No
Teaching & Learning	300	—	1	60	0	30	7	7	8	4	—	6-40	0	APA	Yes	None	Yes	No
Tech Trends	9,000	69	2	43	70	25	10	14	6	4	20	5-24	2	APA or Chicago	Yes	Possibly	Yes	Yes
Theory Into Practice	4,000	80	2	70	100	—	10	1	8	10	15	10-18	2-3	APA	Yes	None	Yes	Yes
Vocational Education Journal	48,000	10	3	5	70	10	14	10	14	5	8	—	1	Chicago	Yes	Likely	No	No

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*All or most articles are by invitation only

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SEPTEMBER 1990

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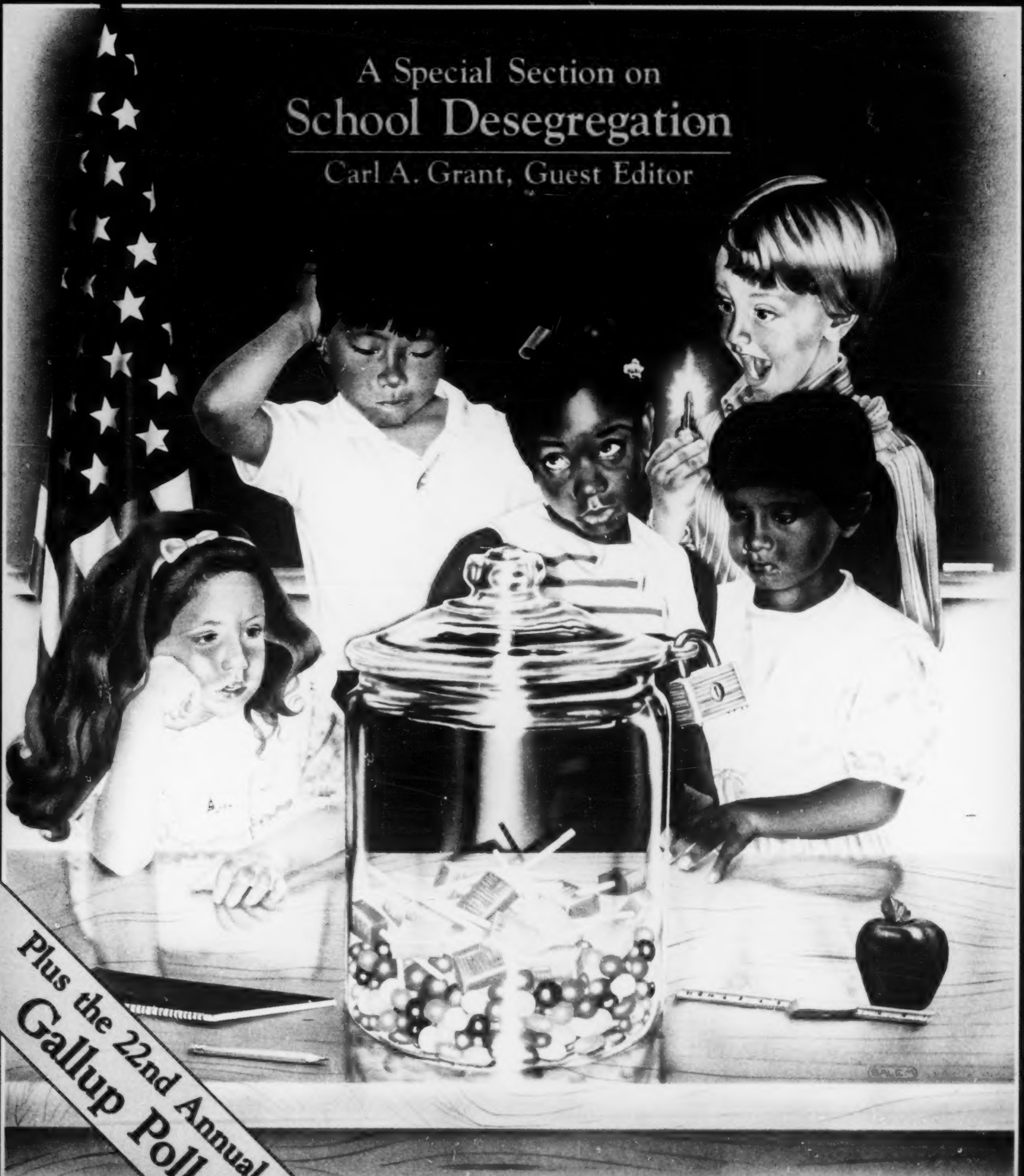

A Special Section on

School Desegregation

Carl A. Grant, Guest Editor

Plus the 22nd Annual

Gallup Poll

Phi Delta
KAPPAN
September 1990 • Volume 72 • Number 1

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Cover Illustration: Kay Salem

THE EDITOR'S PAGE

Reading Between The Lines

WRITING in the spring 1990 issue of *Media & Values*, Patricia Hynds noted: "When I read the daily newspaper or watch the evening news, what is missing often upsets me as much as what is there. What is missing frequently seems to be the truth."

I used to share Hynds' sentiment every time I read the annual Gallup/Phi Delta Kappa poll. That yearly snapshot of national opinion about the public schools often seemed to me not to jibe with the portrait of American education as most educators know it.

I gritted my teeth during the years when the American public identified discipline as the number-one problem facing the schools. And I smiled when sporadic surveys of teachers during those years ranked discipline far down on the list of problems.

In 1986 the public changed its mind and began pointing to drug use as the worst problem confronting the schools. Simultaneously, surveys of the young were showing a gradual *decline* both in experimentation with and in frequent use of illicit drugs. And a Gallup/Phi Delta Kappa poll of teachers in June 1989 found only 29 of 830 respondents mentioning drug abuse as the number-one problem facing the schools.

Gradually, these and other discrepancies between public perceptions and school realities made me conscious of the fact that a majority of respondents to the annual Gallup/Phi Delta Kappa polls are naive observers who lack firsthand information about the schools. Indeed, when respondents were asked in 1988 where they got their information about the schools, the largest number (52%) said that they relied on newspapers – up from 38% in 1973, when the largest number of respondents (43%) said they relied on students for their information.

So why bother with the annual poll (the 22nd of which appears in this issue of the *Kappan*)? The answer is that public perceptions – accurate or not – are important to schoolpeople. Knowledge of public opinion helps us do a better job.

When public opinion is clearly in error (as is the case this year regarding the connection between retention in grade and dropping out), we must try to educate the public.

When public opinion suggests that a widely touted innovation may have unanticipated negative consequences (as is the case this year regarding the possible effects of school choice on the racial composition of student bodies), we must pay attention to that finding and make certain that the negative consequences do not materialize.

When the public expresses its opinion on policy or on curriculum and instruction, we must listen carefully – and respond, after conducting local polls to make sure that national opinion tallies with local sentiment.

When public opinion suggests that the schools have an image problem, we must take steps to improve that image.

And when the grades that *parents* give the schools suggest that familiarity breeds respect, we must not only take that important lesson to heart – but also take heart from it. – PBG

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The *Phi Delta Kappan* publishes articles concerned with educational research, service, and leadership; issues, trends, and policy are emphasized. Views expressed do not necessarily agree with positions taken by Phi Delta Kappa, the professional fraternity in education.

The 22nd Annual
GALLUP POLL
Of the Public's Attitudes Toward the Public Schools

by Stanley M. Elam

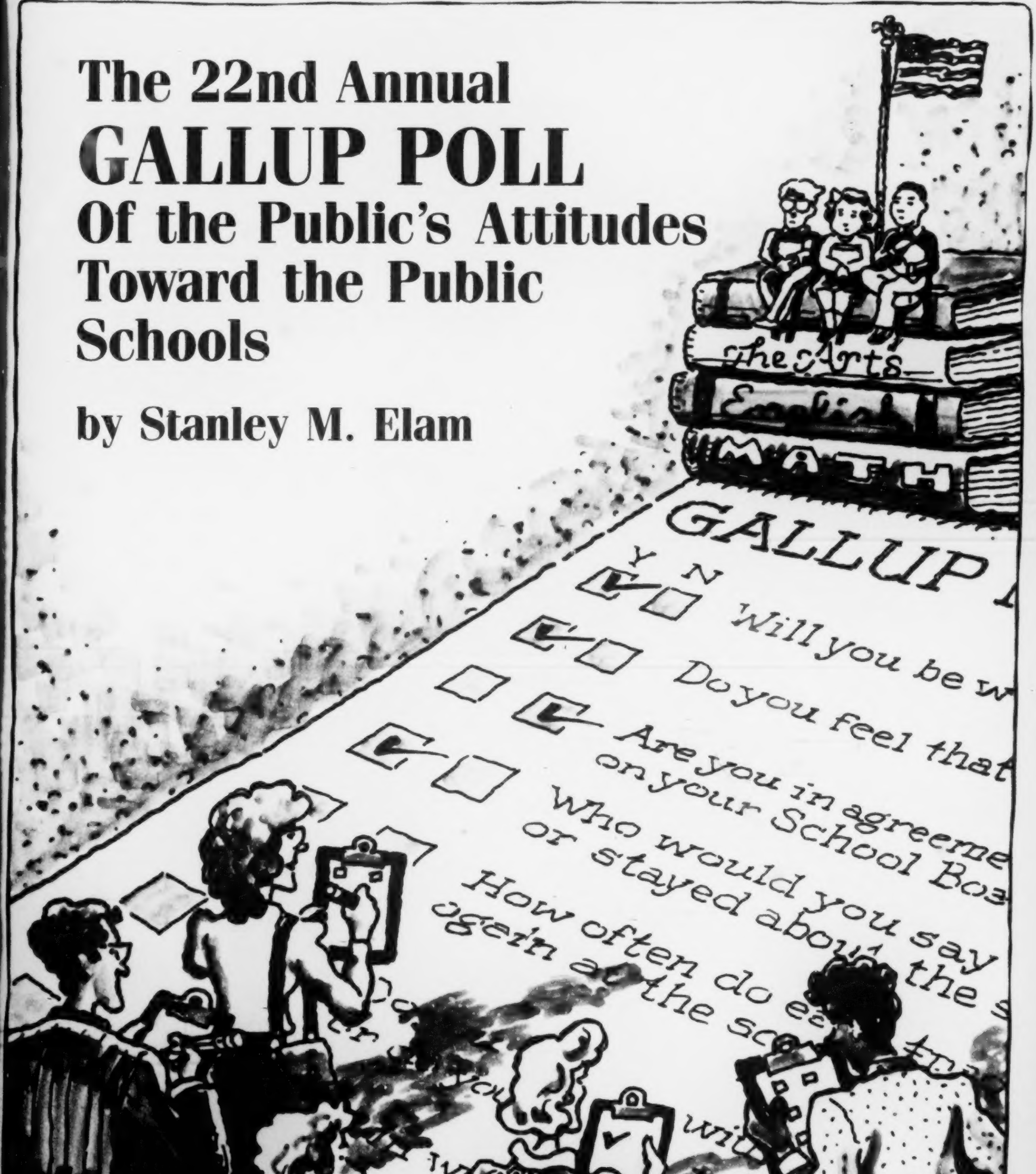
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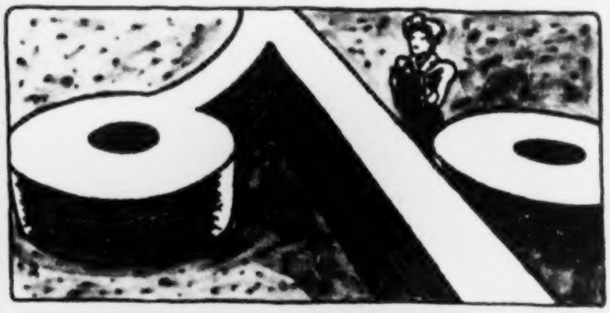
Illustration by Marcus Hamilton



National Goals for Education

People strongly believe in the six education goals for the Nineties announced last February, with appropriate fanfare, by President George Bush and the 50 state governors. They believe in them so strongly that they would like to vote for political candidates who support these goals. But people are also profoundly skeptical about the possibility that the goals can be reached within this decade, which was part of the plan put forth by the President and the governors.

These conclusions are drawn from answers to three key questions asked in the 22nd Annual Poll of the Public's Attitudes Toward the Public Schools, sponsored by Phi Delta Kappa and conducted by the Gallup Organization in April and May 1990.

More than three-quarters of the 1,594 adults interviewed for the poll attach very high or high priority to all six of the national goals for education. They give highest priority to the last goal: to free every school in America from drugs and violence and offer a disciplined environment conducive to learning. But only 5% of the respondents think it very likely that we will achieve this goal by the year 2000, and 36% think it very *unlikely* that we will. The only goal among the six that even 50% of the people think we might reach in this decade is that of readying children to learn by the time they start school.

This pessimism echoes the judgment of many experts, some of whom, like Dorothy Rich, president of the Home and School Institute and a member of the governing board for the National Assessment of Educational Progress, regard the goals as political pabulum. "They are too big to be doable," she asserts. "It's like saying, 'No one will be killing each other in automobile accidents by the year 2000.' "*

The nation's education goals for the Nineties, as stated by President Bush at the conclusion of his February conference with the 50 state governors, are:

A. By the year 2000, all children in America will start school ready to learn [i.e., in good health, having been read to and otherwise prepared by parents, etc.].

B. By the year 2000, the high school graduation rate will increase to at least 90% [from the current rate of 74%].

C. By the year 2000, American students will leave grades 4, 8, and 12 having demonstrated competency in challenging subject matter, including English, mathematics, science, history, and geography. In addition, every school in America will insure that all students learn to use their minds, in order to prepare them for responsible citizenship, further learning, and productive employment in a modern economy.

D. By the year 2000, American students will be first in the world in mathematics and science achievement.

E. By the year 2000, every adult American will be literate and will possess the skills necessary to compete in a global economy and to exercise the rights and responsibilities of citizenship.

F. By the year 2000, every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning.

The first question:

This card describes several national education goals that have been recommended for attainment by the year 2000. First, would you read over the description of the different goals on the card. Now, as I read off each goal by letter, would you tell me how high a priority you feel that goal should be given during the coming decade — very high, high, low, or very low?

	Priority Assigned Each Goal				
Goal	Very High %	High %	Low %	Very Low %	Don't Know %
A	44	44	6	2	4
B	45	42	8	1	4
C	46	42	7	2	3
D	34	42	16	3	5
E	45	37	11	3	4
F	55	26	9	6	4

The second question:

As I read off each goal by letter again, would you tell me whether you think reaching that goal by the year 2000 is very likely, likely, unlikely, or very unlikely?

	Likelihood of Attainment				
Goal	Very Likely %	Likely %	Unlikely %	Very Unlikely %	Don't Know %
A	12	38	33	12	5
B	10	35	37	12	6
C	9	38	36	12	5
D	6	23	41	24	6
E	7	25	42	21	5
F	5	14	40	36	5

The third question:

As I read off each goal by letter again, please tell me how much influence a political candidate's support for that goal would have on your decision to vote for him or her — a great deal, a fair amount, not very much, or almost none.

---

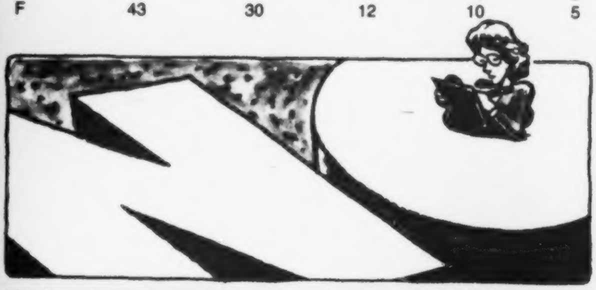
*For a roundup of expert opinion on the goals, see Lynn Olson, "Lessons Learned? Old Goal-Setting Stirs New Doubts," *Education Week*, 14 February 1990, pp. 1, 23. The same article appears in the April 1990 issue of *Teacher*, under the title "Now Comes the Hard Part" (pp. 12-15).

STANLEY M. ELAM (Indiana University Chapter) is contributing editor of the Phi Delta Kappan. *He was* Kappan *editor from 1956 through 1980 and has been coordinating Phi Delta Kappa's polling program since his retirement.*

Illustrations by Marcus Hamilton

Influence of Candidate's Support on My Vote

Goal	A Great Deal %	A Fair Amount %	Not Very Much %	Almost None %	Don't Know %
A	29	37	18	11	5
B	30	36	19	10	5
C	32	36	17	10	5
D	26	35	21	13	5
E	33	36	16	10	5
F	43	30	12	10	5



Trends in Support for Parental Choice

Beginning in 1979, these annual polls have probed the sensitive issue of parental choice of schools. In that year parents were asked if they would like to send their eldest child to a public school different from the school that child currently attended. The great majority of parents (78%) whose eldest child was 12 or younger said no; only 12% said yes. An even larger majority (85%) of parents whose eldest child was older than 12 said no, while 11% said yes. This was hardly a resounding endorsement of school choice.

In 1986, however, two related questions were asked, with considerably different results. In that year 68% of public school parents said they wished they had the right to choose the public schools their children would attend, while 25% said they did not. Mothers were particularly intrigued with the idea; 73% of mothers (but only 62% of fathers) said they wished they could choose their children's schools. The percentage of public school parents who said they would choose the same schools their children currently attended dropped from the higher 1979 level down to 65%, again with women particularly favoring change.

In 1987 all respondents were asked whether they thought parents in their community should have the right to choose which local schools their children would attend. Seventy-one percent of the total sample (and 81% of all nonpublic school parents) said yes; only 20% of the total sample said no.

A question intended to reveal attitudes toward vouchers was asked several times in these surveys. The question was worded as follows: "In some nations, the government allots a certain amount of money for each child's education. The parents can then send the child to any public, parochial, or private school they choose. This is called the 'voucher system.' Would you like to see such an idea adopted in this country?" The national totals were:

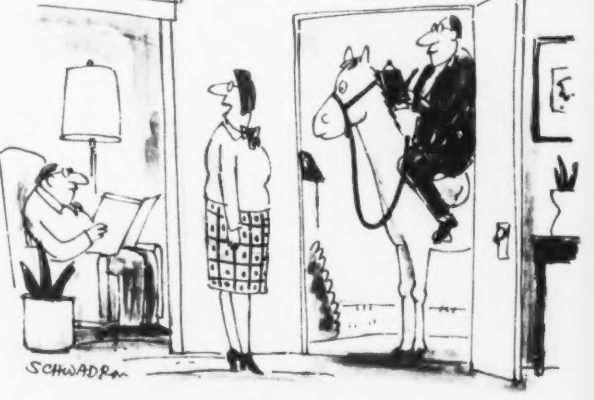
	1987 %	1986 %	1985 %	1983 %	1981 %	1971 %	1970 %
Favor	44	46	45	51	43	38	43
Oppose	41	41	40	38	41	44	46
Don't know	15	13	15	11	16	18	11

The 1987 poll followed this voucher question with another, asking people whether they thought the voucher system would help or hurt the local public schools. Forty-two percent said they thought vouchers would hurt the public schools, and 36% said they thought vouchers would help. Of those who *favored* vouchers, 73% thought that vouchers would help the local public schools; of those *opposed* to vouchers, 81% thought that vouchers would damage the local public schools.

Now that several states have begun experimenting with parental choice plans and the idea of school choice has the backing of President Bush and the U.S. Department of Education, the question on choice has been asked in a new form. As framed in 1989, it avoided the issue of public versus nonpublic schools that arises when vouchers are discussed. People were simply asked whether they favor or oppose allowing students and their parents to choose the public schools that students attend, regardless of where they live. (Respondents were not asked to consider the many ramifications of public school choice.) A sizable majority supported the idea in 1989 (60% in favor to 31% opposed), and the results were virtually identical when the same question was asked again this year.

In the 1989 poll, the question on school choice was followed by three other questions intended to reveal opinions regarding whether choice would improve all or only some schools, whether choice would improve student achievement, and whether choice would increase student satisfaction with the local schools. A majority (51%) thought choice would improve some schools and hurt others. Forty-two percent thought that choice would not make much difference in student achievement, but another 40% thought that achievement would increase. Half of the respondents (49%) thought that student satisfaction with the schools would improve; 37% said that choice would make little difference; and 7% said that student satisfaction would be lower.

It seems clear from the above record that the idea of public school choice is attractive, much as motherhood, freedom, and apple pie are attractive. It remains to be seen whether choice plans can be carried out in ways that preserve other values that may be equally important to people. The current experiments in Minnesota, Arkansas, and Iowa should give us clues.



"Someone from the Gallup poll, Mel."

The question:

Do you favor or oppose allowing students and their parents to choose which public schools in this community the students attend, regardless of where they live?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Favor	62	60	65	81
Oppose	31	33	30	14
Don't know	7	7	5	5

Further breakdowns for the 1990 question:

	Favor %	Oppose %	Don't Know %
NATIONAL TOTALS	62	31	7
Sex			
Men	61	34	5
Women	63	29	8
Race			
White	60	34	6
Nonwhite	72	18	10
Age			
18 - 29 years	72	23	5
30 - 49 years	63	31	6
50 and over	54	38	8
Community Size			
1 million and over	64	27	9
500,000 - 999,999	61	36	3
50,000 - 499,999	60	33	7
2,500 - 49,999	61	36	3
Under 2,500	60	33	7
Education			
College	62	33	5
Graduate	62	30	8
Incomplete	63	34	3
High school	65	28	7
Graduate	66	28	6
Incomplete	62	29	9
Grade school	44	43	13
Income			
$40,000 and over	59	37	4
$30,000 - $39,999	62	32	6
$20,000 - $29,999	67	27	6
$10,000 - $19,999	60	30	10
Under $10,000	60	31	9
Region			
East	62	27	11
Midwest	57	38	5
South	66	28	6
West	62	34	4

Reasons for Choosing a School

In 1990 a new dimension was added to the survey's treatment of parental choice. Respondents were asked what aspects of a public school would be most influential in decision making should parental choice be adopted in their community. Teacher quality, student discipline, and the curriculum were judged very important by three-fourths or more of all respondents, but class size, the track record of graduates in college or on the job, school size, and proximity to the student's home were also rated either very or fairly important by large majorities.

These are all legitimate considerations. But one set of responses calls attention to the same concern about parental choice in public education that critics of voucher systems raise: Would not parental choice encourage and/or permit segregation on the basis of race, ethnicity, and perhaps socioeconomic status? Civil libertarians insist that a democracy cannot tolerate this kind of elitism and discrimination in the public schools.

Forty-eight percent of the respondents admitted that the racial or ethnic composition of the student body would be either a very or a fairly important consideration in decision making. This response puts racial and ethnic considerations near the bottom of the list. In interpreting such data, however, it is well to remember a distinction between public opinion and private sentiment drawn by historian John Lukacs: public opinion is the formal remarks that folks make to pollsters; private sentiment is the set of beliefs and biases that people are often too embarrassed to disclose. It is possible that racial and ethnic considerations are much more important factors in school choice than people admit to pollsters.

The question:

This card lists different factors that might be considered in choosing a public school for a child, assuming that a free choice of public schools was allowed in this community. As I read off each of these factors one at a time, would you tell me whether you would consider it very important, fairly important, not too important, or not important at all in choosing a local school?

	National Totals				
	Very Important %	Fairly Important %	Not Too Important %	Not Important at All %	Don't Know %
Quality of the teaching staff	87	8	2	*	3
Maintenance of student discipline	78	17	1	1	3
Curriculum (i.e., the courses offered)	73	22	2	*	3
Size of classes	56	32	8	1	3
Grades or test scores of the student body	48	41	7	1	3
Track record of graduates in high school, in college, or on a job	43	38	12	3	4
Size of the school	35	37	21	4	3
Proximity to home	31	43	19	4	3
Extracurricular activities, such as band/ orchestra, theater, clubs	24	50	20	3	3

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	Very Important %	Fairly Important %	Not Too Important %	Not Important at All %	Don't Know %
Social and economic background of the student body	22	37	31	7	3
Racial or ethnic composition of the student body	21	27	34	15	3
Athletic program	20	38	32	7	3

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*Less than one-half of 1%.

Parental Control of Public Schools

Since 1987 the public schools of Rochester, New York, have been run by a team of parents, teachers, and administrators. In Chicago locally elected councils composed predominantly of parents have been in charge of all the city's 541 public schools since last fall.

Responses to a question asked in last year's poll suggest that similar experiments would be warmly received elsewhere. The 1989 poll showed that more than 40% of the general public believed that parents should have a greater say regarding the allocation of school funds, the content of the curriculum, the hiring of teachers and administrators, and the choice of textbooks and instructional materials.

The 1989 question:

Do you feel that parents of public school students should have more say, less say, or do they have about the right amount of say regarding the following areas in public schools?

	More Say 1989 %	Less Say 1989 %	Right Amount 1989 %	Don't Know 1989 %
Allocation of school funds	59	10	27	4
Curriculum (i.e., the courses offered	53	9	36	2
Selection and hiring of administrators	46	14	37	3
Books and instructional materials	43	13	41	3
Selection and hiring of teachers	41	17	38	4
Teacher and administrator salaries	39	17	39	5
Books placed in the school libraries	38	15	44	3

In the current poll, people were asked for their opinion on how much influence public school parents actually do exercise in most of these same areas. The responses show that the public perceives parental influence to be minimal. In areas such as salaries and hiring, half of the respondents said that parents have almost no say.

The question:

In your opinion, how much say do the parents of public school students have about the following areas in the public schools in this community — a great deal, a fair amount, very little, or almost none?

	A Great Deal %	A Fair Amount %	Very Little %	Almost None %	Don't Know %
Books placed in the school libraries	5	17	29	37	12
Curriculum (i.e., the courses offered)	4	21	37	28	10
Books and instructional materials	3	14	31	41	11
Teacher and administrator salaries	3	12	25	50	10
Selection and hiring of administrators	3	11	26	50	10
Selection and hiring of teachers	2	8	29	52	9

Examinations for Promotion

Because many policy-making bodies have recently declared war on what they view as soft or shoddy academic standards, a question about promotion policy was included in this poll.

Public opinion continues to oppose promotion from one grade to the next unless the student can pass examinations — presumably grade- and curriculum-appropriate examinations. Opinion seems not to have changed on the issue since the question was first asked in 1978. But it is probably accurate to say that a majority of educators hold a different opinion. Although few teachers approve of strictly "social" promotion, most believe that considerations other than passing an exam must be taken into account when decisions about promotion are made. There is much research evidence to support their belief. Certainly, making a child repeat a grade without taking other steps to help him or her learn is often counterproductive. This is an area in which the profession needs to educate the general public.

The question:

In your opinion, should children be promoted from grade to grade only if they can pass examinations?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Yes	67	67	66	71
No	29	28	31	27
Don't know	4	5	3	2

	National Totals			
	1990 %	1984 %	1983 %	1978 %
Yes	67	71	75	68
No	29	25	20	27
Don't know	4	4	5	5

Retention in Grade and Dropout Rates

Get tough! This is the advice commonly offered to educators by critics who regard student achievement in public schools as unsatisfactory. To them, getting tough often means retention in grade for the student who can't or won't master the curriculum. At the same time, many of the same critics deplore today's public school dropout rate. Is there a connection between retention in grade and the dropout rate? This year's poll explored current opinion on the issue.

The question:

Just your impression — which children are more likely to drop out of school: those who fail achievement tests and have to repeat a grade, or those who fail achievement tests and are promoted anyway?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
More of those who repeat a grade will drop out	32	34	28	31
More of those promoted anyway will drop out	54	52	60	56
Don't know	14	14	12	13

As well-informed educators will recognize, the majority view on this question is at odds with the findings of research. In *Flunking Grades: Research and Policies on Retention* (Falmer Press, 1989), Lorrie Shepard and Mary Lee Smith report the findings of a meta-analysis of 63 studies, which shows that students who are retained in grade are far more likely to drop out than students of similar ability and achievement who are promoted. It is easy to oversimplify the Shepard/Smith findings, but there is little doubt that their chief conclusion is correct. Thus the majority view on this question is merely opinion, and it is erroneous.

It is interesting to note that opinion expressed by nonwhites on this question is closer to the findings of research than is the opinion of whites. Forty-four percent of nonwhites (but only 30% of whites) believe that repeaters are more likely to drop out. By contrast, 57% of whites (but only 41% of nonwhites) believe that students who are promoted despite unsatisfactory performance are more likely to drop out.

"Judging from your grades, I'd say you've found your niche — it's the fourth grade."

Access to Personal Information About Students

Research recently conducted by members of Phi Delta Kappa under the direction of Jack Frymier, senior fellow at Phi Delta Kappa International Headquarters, shows that teachers have only limited access to the kinds of personal background information about students that would help them adapt their methods to individual needs.* Because of privacy considerations, schools have been hesitant to collect this kind of information and make it available to teachers, even under rules designed to guarantee strict confidentiality.

Answers to a question asked in the current poll show that a majority (60%) of the respondents favor giving educators more latitude to collect and use personal information. However, the size of this majority is by no means overwhelming, as it should probably be before policies are changed. This is a case in which local polls would be useful to policy makers.**

The question:

Some educators say that the public schools could do a better job of educating students if they had more personal information about the home situations of students, for example, whether the parents are divorced, whether there is a family history of alcoholism, or whether there are other factors that put the student at risk. Assuming that the information is kept confidential, do you think that the public schools in this community should or should not have access to more personal information about students than they now have?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Should	60	61	56	61
Should not	32	30	37	32
Don't know	8	9	7	7

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*Jack Frymier and Bruce Gansneder, "The Phi Delta Kappa Study of Students at Risk," *Phi Delta Kappan*, October 1989, pp. 142-46.

**Phi Delta Kappa distributes a manual titled *PACE* (Polling Attitudes of the Community on Education), which explains in detail how to conduct accurate local polls. For information, contact Neville Robertson, Director, Center for Dissemination of Innovative Programs, Phi Delta Kappa, P.O. Box 789, Bloomington, IN 47402. Ph. 812/339-1156.

Illustration by Marcus Hamilton

Equal Educational Opportunity

Whites in America seem convinced that, on the whole, blacks and other minority children have the same educational opportunities as whites. This conviction has not changed since 1975, when the question was first asked in these surveys.

But nonwhites (who make up 14% of the sample in the current poll) have a considerably different view. A disturbing 38% see inequality of opportunity in education. Much of the dissatisfaction appears in larger cities, where minority populations are concentrated.

The question:

In your opinion, do black children and other minorities in this community have the same educational opportunities as white children?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Yes	79	78	81	77
No	15	16	14	19
Don't know	6	6	5	4

Further breakdowns:

	Yes %	No %	Don't Know %
NATIONAL TOTALS	79	15	6
Sex			
Men	80	15	5
Women	79	15	6
Race			
White	83	11	6
Nonwhite	56	38	6
Age			
18 - 29 years	73	22	5
30 - 49 years	81	13	6
50 and over	82	12	6
Community Size			
1 million and over	71	23	6
500,000 - 999,999	82	17	1
50,000 - 499,999	81	13	6
2,500 - 49,999	90	8	2
Under 2,500	86	6	8
Education			
College	79	15	6
Graduate	78	15	7
Incomplete	80	15	5
High school	80	15	5
Graduate	79	15	6
Incomplete	82	14	4
Grade school	78	15	7
Income			
$40,000 and over	80	13	7
$30,000 - $39,999	83	12	5
$20,000 - $29,999	80	16	4
$10,000 - $19,999	82	15	3
Under $10,000	75	19	6
Region			
East	80	13	7
Midwest	80	11	9
South	81	17	2
West	76	20	4

Desirability of Teaching as a Career

Perceptions of the desirability of public school teaching as a career have been measured seven times since this series of polls began in 1969. The attractiveness of the occupation has fluctuated considerably, related no doubt to changing popular attitudes toward the schools and to impressions about teacher income. Unfortunately, only about half of today's parents (compared with 75% in 1969) would like to see one of their children become a public school teacher. Interestingly, college-educated and high-income respondents are as likely as poorly educated and low-income respondents to perceive teaching as a desirable career for their children today.

The question:

Would you like to have a child of yours take up teaching in the public schools as a career?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Yes	51	49	56	51
No	38	39	37	40
Don't know	11	12	7	9

	National Totals						
	1990 %	1988 %	1983 %	1981 %	1980 %	1972 %	1969 %
Yes	51	58	45	46	48	67	75
No	38	31	33	43	40	22	15
Don't know	11	11	22	11	12	11	10

Teacher Salaries, Working Conditions, And School Quality

In 1969 more people thought teacher salaries in their communities were about right (43%) than thought them too low (35%). Today 50% of poll respondents think salaries are too low, and 31% think them about right. Only a small minority has ever thought that teachers are paid too much for their services.

Respondents to the current poll were asked whether they think raising teacher salaries would improve school quality. A substantial majority (79%) do think that higher salaries would have this effect, but 17% said that there would be almost no improvement. (Respondents were not given the option of saying that higher salaries would damage school quality.)

A similarly worded question asked about the possible effect on public school quality of better working conditions for teachers. Responses differ little from those obtained for the salary question. However, there is a hint that people think better working conditions would yield more school improvement than higher salaries. Teachers themselves often espouse the same belief.*

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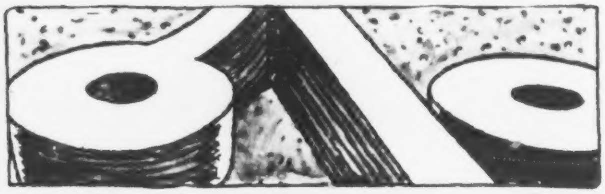
*Stanley Elam, *The Second Gallup/Phi Delta Kappa Survey of Public School Teacher Opinion: Portrait of a Beleaguered Profession* (Bloomington, Ind.: Phi Delta Kappa, 1989).



The first question:

Do you think salaries for teachers in this community are too high, too low, or just about right?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Too high	5	5	3	1
Too low	50	49	54	54
Just about right	31	31	32	34
No opinion	14	15	11	11

	National Totals					
	1990 %	1985 %	1984 %	1983 %	1981 %	1969 %
Too high	5	6	7	8	10	2
Too low	50	33	37	35	29	33
Just about right	31	43	41	31	41	43
No opinion	14	18	15	26	20	22

The second question:

Do you think that raising teacher salaries would improve the quality of education in the schools in this community a great deal, a fair amount, not very much, or almost not at all?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
A great deal	16	14	18	21
A fair amount	35	36	35	33
Not very much	28	28	28	23
Almost not at all	17	17	17	18
Don't know	4	5	2	5

The third question:

Do you think that providing better working conditions for teachers would improve the quality of education in the public schools in this community a great deal, a fair amount, not very much, or almost not at all?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
A great deal	25	24	29	31
A fair amount	37	38	34	36
Not very much	21	21	20	19
Almost not at all	12	11	14	12
Don't know	5	6	3	2

Appropriate Salaries for Teaching And Other Occupations

In the 1984 Gallup/Phi Delta Kappa poll, people assigned numerical values to their impressions of the prestige and value to society of each of 12 different occupations. Public school teachers were ranked third, after the clergy and physicians, in value to society, but they were ranked seventh in prestige or status.

A related question in the current poll suggests that the public does not believe that the value of a profession to society should necessarily determine the income of those who practice that profession. Respondents were asked to indicate what annual salary should be paid to people in each of seven different occupations. As the table below shows, people think teachers should be paid less than medical doctors, lawyers, engineers, pharmacists, and even nurses. Interestingly, the clergy, whose societal contribution the public considers so valuable, are dead last in terms of the salary the public would assign them.

The question:

As I mention the name of an occupation or profession, would you please tell me the annual salary you feel people in that occupation should be paid in this community?

	$50,000 And Over %	$40,000-$49,999 %	$30,000-$39,999 %	$29,999-Or Less %	Don't Know %
Medical doctors	73	6	3	10	8
Lawyers	66	10	6	8	10
Engineers	53	20	11	6	10
Pharmacists	38	23	18	14	7
Nurses	26	22	26	18	8
Public school teachers	21	21	28	22	8
Plumbers	18	19	30	25	8
Clergy	12	14	26	37	11

Required Core Courses

For the sixth time, this poll gathered data on the public's perception of which subjects should be required of high school students who are bound for college and of high school students who are not college-bound. Public opinion on these issues has changed little over the past decade. For students who plan to attend college, more than 70% of the respondents would require at least five basic subjects: math, English, history, science, and computer training.

Illustrations by Marcus Hamilton

More than half would require geography, career education, business education, foreign language, and health education. People would place less emphasis on several of these subjects for non-college-bound students, particularly foreign language and science, but they would require vocational education instead.

The question:

> **Please look over this card, which lists high school subjects. If you were the one to decide, what subjects would you require every public high school student who plans to go on to college to take? What about those *not* planning to go on to college?**

	For Those Planning to Go to College					
	1990 %	1987 %	1985 %	1984 %	1983 %	1981 %
Mathematics	96	94	91	96	92	94
English	92	91	88	94	88	91
History/U.S. government	84	84	76	84	78	83
Science	81	83	76	84	76	76
Computer training	75	72	71	–	–	–
Geography	63	–	–	–	–	–
Career education	62	63	57	–	–	–
Business education	59	59	59	68	55	60
Foreign language	56	56	53	57	50	54
Health education	53	54	48	52	43	47
Physical education	40	45	40	43	41	44
Vocational training	29	31	27	37	32	34
Art	24	23	23	24	19	28
Music	22	23	24	22	18	26

(Figures add to more than 100% because of multiple answers.)

	For Those *Not* Planning to Go to College					
	1990 %	1987 %	1985 %	1984 %	1983 %	1981 %
Mathematics	90	88	85	92	87	91
English	86	85	81	90	83	89
Vocational training	74	78	75	83	74	64
History/U.S. government	67	69	61	71	63	71
Computer training	63	61	57	–	–	–
Business education	63	65	60	76	65	75
Career education	60	61	57	–	–	–
Science	58	57	51	61	53	58
Health education	50	49	43	50	42	46
Geography	48	–	–	–	–	–
Physical education	38	41	40	44	40	43
Foreign language	25	20	17	19	19	21
Art	17	17	15	18	16	20
Music	16	15	15	18	16	20

(Figures add to more than 100% because of multiple answers.)

Subjects High Schools Should Emphasize

Respondents to this poll were asked which subjects should receive more — and which subjects should receive less — emphasis in high school. People tend to want more emphasis on the same subjects that top their required lists. For example, 80% would increase emphasis on mathematics. But it is something of an anomaly that foreign language is given short shrift, since so many people would require it for college-bound students. Not surprisingly — although most educators will deplore this finding — many respondents would deemphasize music and art.

The question:

> **As I read off each high school subject, would you tell me if you think that subject should be given more emphasis, less emphasis, or the same emphasis it now receives in high school — regardless of whether or not you think it should be required?**

	National Totals			
	More Emphasis %	Less Emphasis %	Same Emphasis %	Don't Know %
Mathematics	80	3	14	3
English	79	3	15	3
Computer training	79	5	12	4
Career education	73	6	16	5
Science	68	11	18	3
History/U.S. government	65	9	23	3
Vocational education	65	9	22	4
Health education	62	10	25	3
Business	60	11	25	4
Geography	53	18	25	4
Foreign language	37	34	25	4
Physical education	32	27	37	4
Music	13	39	43	5
Art	12	42	40	6

Beyond the Basics

People would like their public high schools to do much more than teach the so-called basics. In fact, more people would require drug abuse education in high schools than would require any subjects other than math and English. Alcohol abuse education, AIDS education, sex education, and information about environmental issues and about teen pregnancy are also high on the public's list of subjects to be required. Character education, which is uncommon as a formal subject in public high schools, has as much support as a required subject as does driver education.

The question:

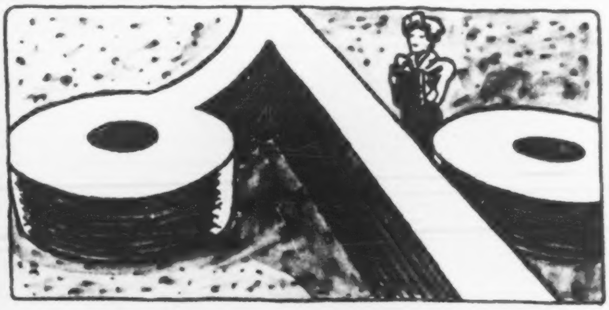
> **Please look over this card, which lists areas in which some public high schools offer instruction beyond the standard academic courses. If you were the one to decide, which subject areas would you *require* every public high school student to study?**

	National Totals %	Public School Parents %	No Children In School %
Would Require			
Drug abuse education	90	92	89
Alcohol abuse education	84	86	82
AIDS education	77	77	77
Sex education	72	74	71
Environmental issues and problems	66	65	66
Teen pregnancy	64	64	65
Driver education	59	62	59
Character education	57	56	57
Parenting/parent training	46	48	45
Dangers of nuclear waste	30	29	31
Dangers of nuclear war	28	28	28
Communism/socialism	24	23	25

(Figures add to more than 100% because of multiple answers.)

	National Totals		
	1990 %	1984 %	1983 %
Would Require			
Drug abuse education	90	82	81
Alcohol abuse education	84	79	76
AIDS education	77	–	–
Sex education	72	–	–
Environmental issues and problems	66	–	–
Teen pregnancy	64	–	–
Driver education	59	73	72
Character education	57	–	–
Parenting/parent training	46	55	58
Dangers of nuclear waste	30	61	56
Dangers of nuclear war	28	51	46
Communism/socialism	24	57	51

(Figures add to more than 100% because of multiple answers.)



Success in High School And in Later Life

Educators are well aware that there is a close correlation between academic success in high school and academic success in college. This relationship has been extensively explored and documented. The current poll shows that the general public is also aware of this correlation: 76% of poll respondents said that the relationship between success in high school and success in college is either very close or fairly close.

The relationship between academic success in high school and success in one's occupation is less extensively researched and documented, partly because of the difficulty of measuring "success" in an occupation. But as the answers to the second question below demonstrate, nearly as many laypeople believe that high school grades correlate with occupational success as believe in the connection between high school grades and college success. These findings are congruent with earlier poll findings that show how important people believe a good education to be for success in one's life work.

The first question:

> **Just your impression — how close a relationship do you feel there is between how high a student's grades are in high school and how academically successful he or she will be in college? Do you feel the relationship is very close, fairly close, not very close, or not close at all?**

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Very close	25	25	26	21
Fairly close	51	51	51	63
Not very close	13	13	13	11
Not close at all	4	3	4	1
Don't know	7	8	6	4

The second question:

> **Just your impression — how close a relationship do you feel there is between how good a student's grades are in high school and how successful he or she will be after completing school, that is, in an occupation or profession? Do you feel the relationship is very close, fairly close, not very close, or not close at all?**

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Very close	21	19	23	12
Fairly close	49	49	48	68
Not very close	19	20	18	11
Not close at all	5	5	7	1
Don't know	6	7	4	8

Grading the Public Schools

Over the past seven years there have been no statistically significant changes in the ratings people give their local public schools. During this period, between 40% and 43% of poll respondents have graded their local schools A or B. The highest ratings were given in 1974, when this question was first asked. In that year nearly half (48%) of all respondents gave their schools an A or a B. The low point came in 1983, just after *A Nation at Risk* was released by the National Commission on Excellence in Education and was widely publicized by the media. Only 31% of poll respondents gave local schools an A or a B in that year. Even allowing for some sampling error, the drop of 17 percentage points in approval ratings between 1974 and 1983 represented a negative shift in opinion for perhaps 25 million of the 170 million or more voting-age adults in the U.S. Now

Illustrations by Marcus Hamilton

we seem to have gained back about 10 points. These trends are presented in the tables below.

One interesting but unexplained feature of the 1990 findings is the fact that, for the first time in several years, whites and nonwhites award very similar ratings to their local public schools. In past polls nonwhites tended to give their schools measurably lower ratings. For example, in 1987 only 35% of nonwhites gave their schools A or B ratings; 43% of whites did so. This year the figures are virtually identical for the two groups.

As past polls have amply demonstrated, people tend to give higher grades to their local public schools than they give to public schools nationally. There is a suggestion in the tables below of a slow deterioration in the national ratings in recent years. It is tempting to attribute this change to increasingly negative media coverage, but I know of no hard evidence to support such a conclusion.

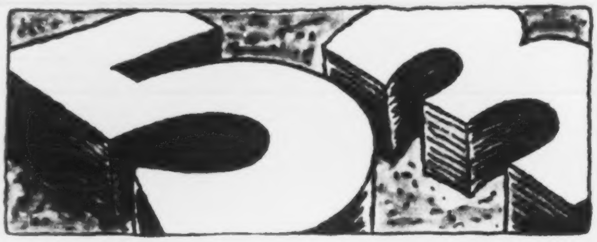
The contrast between ratings given the nation's schools and ratings given local schools by the people who should know them best — parents of children currently attending the schools — is striking and instructive. Note that 72% of parents believe the public school their eldest child attends is worthy of a rating of A or B. Compare this with the 21% A or B rating given to the nation's public schools by all respondents, parents included. The most reasonable explanation for this phenomenon is that the more firsthand knowledge one has about the public schools (i.e., knowledge that doesn't come from the media), the better one likes and respects them.

Other tables presented below reveal the public's opinion on how well elementary teachers, high school teachers, and parents are doing their jobs for America's children.

The first question:

Students are often given the grades A, B, C, D, and FAIL to denote the quality of their work. Suppose the *public* schools themselves, in this community, were graded in the same way. What grade would you give the public schools here — A, B, C, D, or FAIL?

"Seventy percent of me says no; 30% says yes."



	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
A & B	41	39	48	32
A	8	7	12	6
B	33	32	36	26
C	34	34	36	37
D	12	12	9	18
FAIL	5	5	4	6
Don't know	8	10	3	7

Ratings Given the Local Public Schools

	1990 %	1989 %	1988 %	1987 %	1986 %	1985 %	1984 %	1983 %	1982 %	1981 %	1980 %
A & B	41	43	40	43	41	43	42	31	37	36	35
A	8	8	9	12	11	9	10	6	8	9	10
B	33	35	31	31	30	34	32	25	29	27	25
C	34	33	34	30	28	30	35	32	33	34	29
D	12	11	10	9	11	10	11	13	14	13	12
FAIL	5	4	4	4	5	4	4	7	5	7	6
Don't know	8	9	12	14	15	13	8	17	11	10	18

The second question:

How about the public schools in the nation as a whole? What grade would you give the public schools nationally — A, B, C, D, or FAIL?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
A & B	21	20	23	18
A	2	2	2	1
B	19	18	21	17
C	49	49	51	50
D	16	16	14	24
FAIL	4	4	4	5
Don't know	10	11	8	3

The third question:

Using the A, B, C, D, and FAIL scale again, what grade would you give the school your oldest child attends?

	Public School Parents %
A & B	72
A	27
B	45
C	19
D	5
FAIL	2
Don't know	2

	Ratings Given the School Oldest Child Attends					
	1990 %	1989 %	1988 %	1987 %	1986 %	1985 %
A & B	72	71	70	69	65	71
A	27	25	22	28	28	23
B	45	46	48	41	37	48
C	19	19	22	20	26	19
D	5	5	3	5	4	5
FAIL	2	1	2	2	2	2
Don't know	2	4	3	4	3	3

The fourth question:

What grade would you give the public *elementary* school teachers in this community?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
A & B	58	55	67	49
A	18	15	26	10
B	40	40	41	39
C	21	22	21	31
D	6	5	6	12
FAIL	3	2	3	2
Don't know	12	16	3	6

	National Totals	
	1990 %	1987 %
A & B	58	53
A	18	18
B	40	35
C	21	21
D	6	4
FAIL	3	2
Don't know	12	20

The fifth question:

What grade would you give the public *high school* teachers in this community?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
A & B	43	42	44	37
A	8	8	8	7
B	35	34	36	30
C	28	29	28	32
D	10	10	9	12
FAIL	4	4	4	5
Don't know	15	15	15	14

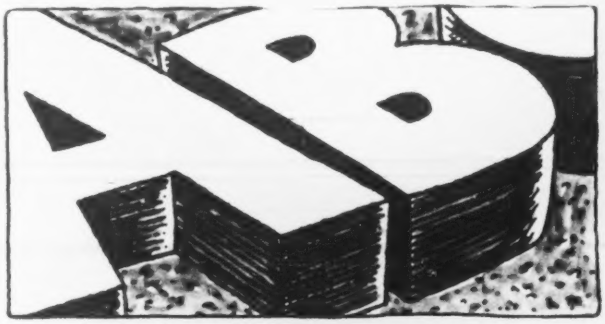
	National Totals	
	1990 %	1987 %
A & B	43	43
A	8	12
B	35	31
C	28	24
D	10	8
FAIL	4	3
Don't know	15	22

The sixth question:

What grade would you give the parents of students in the local public schools for bringing up their children?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
A & B	26	25	28	27
A	3	3	3	1
B	23	22	25	26
C	40	36	47	44
D	20	22	17	19
FAIL	7	9	4	2
Don't know	7	8	4	8

	National Totals	
	1990 %	1984 %
A & B	26	33
A	3	7
B	23	26
C	40	36
D	20	16
FAIL	7	6
Don't know	7	9



Have the Schools Been Improving?

On two occasions — first in 1988 and now in 1990 — Gallup interviewers have asked people whether they think the public schools in their communities have improved, gotten worse, or stayed about the same over the preceding five years. This question is intended to determine whether people believe the current wave of school reform has been successful. Evidently, not many people do. Whereas 29% of those surveyed in 1988 saw improvement over the preceding five years, only 22% did so this year. This finding seems congruent with the opinions people offered about the education goals announced by President Bush and the 50 governors last fall, which were discussed earlier in this report. Not only does a sizable group of respondents think that the schools haven't gotten better recently, but they also think that no great improvement is likely to occur within the current decade.

This preponderantly negative opinion is fairly evenly distributed among the major demographic groups that the Gallup Organization defines. However, the pessimism seems stronger in large cities, in the South and the West, and (ominously) among 18- to 29-year-olds. In cities of a million

Illustrations by Marcus Hamilton

or more people, only 17% think their public schools have improved, while 35% think they have gotten worse. However, in communities of 50,000 and under, more people believe that their schools have improved than believe that they have deteriorated.

The question:

Would you say that the public schools in this community have improved from, say, five years ago, gotten worse, or stayed about the same?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Improved	22	20	29	18
Gotten worse	30	30	27	37
Stayed about the same	36	36	36	39
Don't know	12	14	8	6

	National Totals	
	1990 %	1988 %
Improved	22	29
Gotten worse	30	19
Stayed about the same	36	37
Don't know	12	15

Further breakdowns:

	Improved %	Gotten Worse %	Stayed About The Same %	Don't Know %
NATIONAL TOTALS	22	30	36	12
Sex				
Men	24	27	38	11
Women	20	32	35	13
Race				
White	22	29	37	12
Nonwhite	21	34	34	11
Age				
18 - 29 years	24	37	25	14
30 - 49 years	24	26	39	11
50 and over	18	29	41	12
Community Size				
1 million and over	16	36	35	13
500,000 - 999,999	22	32	39	7
50,000 - 499,999	26	28	33	13
2,500 - 49,999	27	23	39	11
Under 2,500	25	24	39	12
Education				
College	21	27	38	14
Graduate	19	22	44	15
Incomplete	23	31	33	13
High school	22	33	35	10
Graduate	22	32	35	11
Incomplete	22	35	35	8
Grade school	25	23	36	16
Income				
$40,000 and over	21	21	44	14
$30,000 - $39,999	23	33	34	10
$20,000 - $29,999	22	32	35	11
$10,000 - $19,999	24	34	32	10
Under $10,000	24	30	32	14
Region				
East	21	27	37	15
Midwest	21	22	45	12
South	25	37	30	8
West	20	31	33	16

Biggest Problems Facing Local Public Schools in 1990

In 1986, for the first time, the use of drugs edged out lack of discipline as the most frequently mentioned problem that people see besetting the local public schools. Every year since then more people have mentioned the drug problem. In 1989, 34% of the public cited drug use as the most important problem facing the schools; the comparable figure in 1990 is 38%, exactly double the percentage of people who mention lack of discipline. In other respects, the 1990 responses are similar to those given in other recent Gallup/Phi Delta Kappa surveys. However, one problem appears for the first time on this year's list: how to deal with the increasing number of students whose first language is not English. This problem was mentioned by 1% of the respondents and so moved out of the miscellaneous category.

The question:

What do you think are the biggest problems with which the public schools in this community must deal?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Use of drugs	38	40	34	39
Lack of discipline	19	19	17	25
Lack of proper financial support	13	18	17	21
Poor curriculum/poor standards	8	9	7	6
Large schools/overcrowding	7	6	10	16
Difficulty getting good teachers	7	6	10	10
Pupils' lack of interest/truancy	6	7	3	3
Low teacher pay	6	5	6	8
Crime/vandalism	5	7	4	1
Integration/busing	5	5	4	6
Parents' lack of interest	4	5	3	3
Drinking/alcoholism	4	4	4	3
Teachers' lack of interest	4	3	5	5
Moral standards	3	4	2	1
Lack of respect for teachers/other students	3	3	3	4
Lack of needed teachers	3	3	3	1
Lack of family structure	3	3	3	2
Lack of proper facilities	2	1	2	4
Parents' involvement in school activities	2	2	2	2
Mismanagement of funds/programs	2	1	2	1
Problems with administration	2	2	3	3
Communication problems	2	2	2	2
Fighting	2	2	2	*

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Lack of after-school programs	1	1	2	2
Transportation	1	1	1	2
Taxes are too high	1	1	1	1
Too much emphasis on sports	1	1	1	*
School board politics	1	1	2	*
Non-English-speaking students	1	1	*	*
Peer pressure	1	1	*	*
There are no problems	1	1	2	3
Miscellaneous	5	4	6	6
Don't know	6	7	2	5

*Less than one-half of 1%.

(Figures add to more than 100% because of multiple answers.)

Assigning Blame: Schools or Society?

Educators can take some comfort, perhaps, from responses to a question asking where the blame for the problems confronting public education should be placed — on the schools themselves or on society in general. People evidently blame society, not the schools. Note that parents of children who do not attend public schools — those who have already opted out of the public school system — tend to put more blame on the public schools.

The question:

In your opinion, which is more at fault for the problems currently facing public education in this community — the performance of the local public schools or the effect of societal problems?

	National Totals %	No Children In School %	Public School Parents %	Nonpublic School Parents %
Performance of schools	16	14	18	26
Effect of societal problems	73	73	75	63
Don't know	11	13	7	11

Research Procedure

The Sample. The sample used in this survey embraced a total of 1,594 adults (18 years of age and older). It is described as a modified probability sample of the nation. Personal, in-home interviewing was conducted in all areas of the nation and in all types of communities. A description of the sample can be found below.

Time of Interviewing. The fieldwork for this study was carried out during the periods of 6-18 April and 4-22 May 1990.

The Report. In the tables used in this report, "Nonpublic School Parents" includes parents of students who attend parochial schools and parents of students who attend private or independent schools.

Due allowance must be made for statistical variation, especially in the case of findings for groups consisting of relatively few respondents, e.g., nonpublic school parents.

The findings of this report apply only to the U.S. as a whole and not to individual communities. Local surveys, using the same questions, can be conducted to determine how local areas compare with the national norm.

Composition of the Sample

Adults	**%**
No children in school	67
Public school parents	30*
Nonpublic school parents	6*

*Total exceeds 33% because some parents have children attending more than one kind of school.

Sex	**%**
Men	48
Women	52
Race	**%**
White	86
Nonwhite	14
Age	**%**
18-29 years	23
30-49 years	41
50 and over	36
Occupation (Chief Wage Earner)	**%**
Business and professional	29
Clerical and sales	7
Manual labor	37
Nonlabor force	16

Occupation (Chief Wage Earner)	**%**
Farm	3
Undesignated	8
Income	**%**
$40,000 and over	28
$30,000-$39,999	17
$20,000-$29,999	16
$10,000-$19,999	20
Under $10,000	13
Undesignated	6
Region	**%**
East	25
Midwest	25
South	31
West	19
Community Size	**%**
1 million and over	37
500,000-999,999	8
50,000-499,999	19
2,500-49,999	11
Under 2,500	25
Education	**%**
College	43
High school	49
Grade school	8

Design of the Sample

The sampling procedure is designed to produce an approximation of the adult civilian population, age 18 and older, living in the U.S., except for persons in institutions such as prisons or hospitals.

A replicated probability sample is used, down to the block level in urban areas and down to segments of townships in rural areas. More than 300 sampling locations are used in each survey.

The sample design included stratification by these seven size-of-community strata, using 1980 census data: 1) incorporated cities of population 1,000,000 and over, 2) incorporated cities of population 250,000 to 999,999, 3) incorporated cities of population 50,000 to 249,999, 4) urbanized places not included in 1 and 2, 5) cities over 2,500 population outside of urbanized areas, 6) towns and villages with populations less than 2,500, and 7) rural places not included within town boundaries. Each of these strata was further stratified into four geographic regions: East, Midwest, South, and West. Within each city-size/regional stratum, the population was arrayed in geographic order and zoned into equal-sized groups of sampling units. Pairs of localities were selected in each zone, with probability of selection of each locality proportional to its population size in the 1980 census, producing two replicated samples of localities.

For each survey, within each subdivision for which block statistics are available, a sample of blocks or block clusters is drawn with probability of selection proportional to the number of dwelling units. In all other subdivisions or areas, blocks or segments are drawn at random or with equal probability.

In each cluster of blocks and each segment, a randomly selected starting point is designated on the interviewer's map of the area. Starting at this point, interviewers are required to follow a given direction in the selection of households until their assignment is completed.

Interviewing is conducted at times when adults, in general, are most likely to be at home, which means on weekends, or, if on weekdays, after 4 p.m. for women and after 6 p.m. for men.

Allowance for persons not at home is made by a "times-at-home" weighting* procedure rather than by "callbacks." This procedure is a method for reducing the sample bias that would otherwise result from underrepresentation in the sample of persons who are difficult to find at home.

The prestratification by regions is routinely supplemented by fitting each obtained sample to the latest available Census Bureau estimates of the regional distribution of the population. Also, minor adjustments of the sample are made by educational attainment by men and women separately, based on the annual estimates of the Census Bureau (derived from its Current Population Survey) and by age.

---

*A. Politz and W. Simmons, "An Attempt to Get the 'Not at Homes' into the Sample Without Callbacks," *Journal of the American Statistical Association*, March 1949, pp. 9-31.

Sampling Tolerances

In interpreting survey results, it should be borne in mind that all sample surveys are subject to sampling error, i.e., the extent to which the results may differ from what would be obtained if the whole population surveyed had been interviewed. The size of such sampling errors depends largely on the number of interviews.

The following tables may be used in estimating the sampling error of any percentage in this report. The computed allowances have taken into account the effect of the sample design upon sampling error. They may be interpreted as indicating the range (plus or minus the figure shown) within which the results of repeated samplings in the same time period could be expected to vary 95% of the time, assuming the same sampling procedure, the same interviewers, and the same questionnaire.

The first table shows how much allowance should be made for the sampling error of a percentage:

Recommended Allowance for Sampling Error of a Percentage

In Percentage Points
(at 95 in 100 confidence level)*
Sample Size

	1,500	1,000	750	600	400	200	100
Percentages near 10	2	2	3	3	4	5	8
Percentages near 20	3	3	4	4	5	7	10
Percentages near 30	3	4	4	5	6	8	12
Percentages near 40	3	4	5	5	6	9	12
Percentages near 50	3	4	5	5	6	9	13
Percentages near 60	3	4	5	5	6	9	12
Percentages near 70	3	4	4	5	6	8	12
Percentages near 80	3	3	4	4	5	7	10
Percentages near 90	2	2	3	3	4	5	8

---

*The chances are 95 in 100 that the sampling error is not larger than the figures shown.

The table would be used in the following manner: Let us say that a reported percentage is 33 for a group that includes 1,000 respondents. We go to the row for "percentages near 30" in the table and across to the column headed "1,000."

The number at this point is 4, which means that the 33% obtained in the sample is subject to a sampling error of plus or minus four points. In other words, it is very probable (95 chances out of 100) that the true figure would be somewhere between 29% and 37%, with the most likely figure the 33% obtained.

In comparing survey results in two samples, such as, for example, men and women, the question arises as to how large a difference between them must be before one can be reasonably sure that it reflects a real difference. In the tables below, the number of points that must be allowed for in such comparisons is indicated.

Two tables are provided. One is for percentages near 20 or 80; the other, for percentages near 50. For percentages in between, the error to be allowed for lies between those shown in the two tables.

Recommended Allowance for Sampling Error of the Difference

In Percentage Points
(at 95 in 100 confidence level)*

TABLE A — **Percentages near 20 or percentages near 80**

Size of Sample	**1,500**	**1,000**	**750**	**600**	**400**	**200**
1,500	4					
1,000	4	5				
750	5	5	5			
600	5	5	6	6		
400	6	6	6	7	7	
200	8	8	8	8	9	10

TABLE B — **Percentages near 50**

Size of Sample	**1,500**	**1,000**	**750**	**600**	**400**	**200**
1,500	5					
1,000	5	6				
750	6	6	7			
600	6	7	7	7		
400	7	8	8	8	9	
200	10	10	10	10	11	13

---

*The chances are 95 in 100 that the sampling error is not larger than the figures shown.

Here is an example of how the tables would be used: Let us say that 50% of men respond a certain way and 40% of women respond that way also, for a difference of 10 percentage points between them. Can we say with any assurance that the 10-point difference reflects a real difference between men and women on the question? Let us consider a sample that contains approximately 750 men and 750 women.

Since the percentages are near 50, we consult Table B, and, since the two samples are about 750 persons each, we look for the number in the column headed "750," which is also in the row designated "750." We find the number 7 here. This means that the allowance for error should be seven points and that, in concluding that the percentage among men is somewhere between three and 17 points higher than the percentage among women, we should be wrong only about 5% of the time. In other words, we can conclude with considerable confidence that a difference exists in the direction observed and that it amounts to at least three percentage points.

If, in another case, men's responses amount to 22%, say, and women's to 24%, we consult Table A, because these percentages are near 20. We look in the column headed "750" and see that the number is 5. Obviously, then, the two-point difference is inconclusive.

Illustration by Marcus Hamilton

How to Order the Poll

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Acknowledgments

About 100 delegates and officers attending Phi Delta Kappa's Biennial Council last October responded to a call for help in framing this 22nd Gallup/Phi Delta Kappa opinion poll. Their suggestions were carefully considered by a panel of advisers composed of six members of the Phi Delta Kappa professional staff, and a number of topics and questions suggested have been used in this poll in some form. The form of these questions was largely determined by Alec Gallup of the Gallup Organization.

We wish to thank all Kappans who submitted suggestions — and especially the following persons, whose ideas were used:

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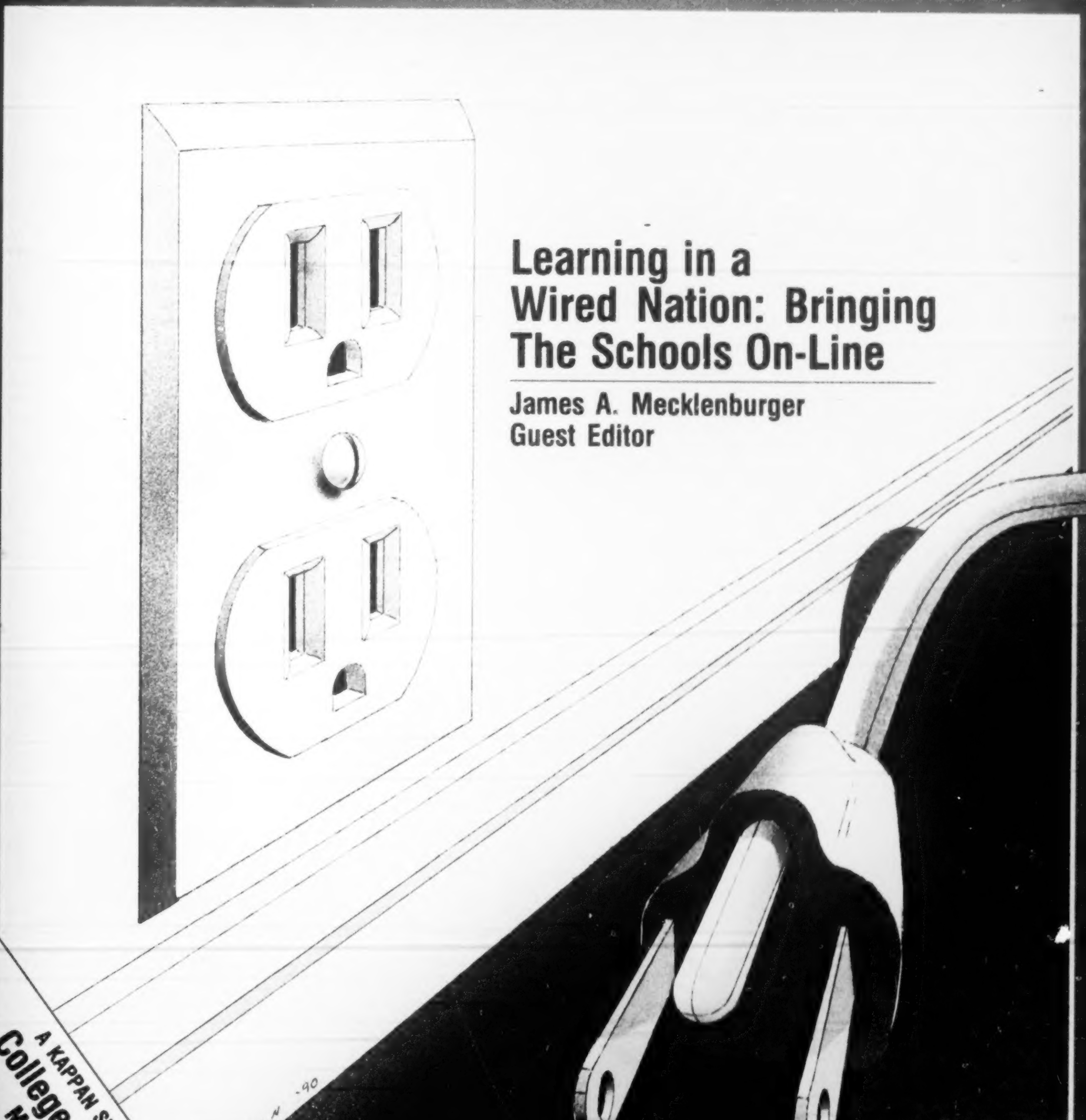

Learning in a Wired Nation: Bringing The Schools On-Line

James A. Mecklenburger
Guest Editor

A KAPPAN SPECIAL REPORT
College Sports Inc.
Murray Sperber

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Cover Illustration: Kerry Gavin

THE EDITOR'S PAGE

Afraid of the Dark?

FOR THOSE wishing to take part in the conversation on school reform in recent years, the password has been *restructuring*. And the *Kappan* has dealt with that topic repeatedly. We've talked about tampering with course schedules and time constraints, about blurring (or eradicating) the boundaries between disciplines, about empowering teachers and principals, about moving beyond the traditional grade-level structure. But the changes that we've suggested have all been on the level of rearranging furniture.

The special section on technology in this month's *Kappan*, by contrast, pushes at the very walls of the school. As guest editor James Mecklenburger points out, it's time to stop thinking about "technology in education" and to start thinking about education within the context of the new technologies.

We're talking *radical* restructuring here – systemic change. And the central question becomes: Who will best use technology in the service of education, professional educators or the private sector? As the articles in this month's issue point out, private providers are currently in the lead – and the education establishment is still absent from the debates about telecommunications policy.

Cynics might say this month's special section is for dreamers. And clearly, there are plenty of barriers to keep professional educators from tapping the transformative powers of technology in any large-scale way.

The major hurdle is the high cost of the necessary hardware and software. In a spring 1990 special issue, *Fortune* pointed out that American schools have only one computer for every 30 students. To reduce that ratio to one for every three students, according to the Office of Technology Assessment, the U.S. would have to spend an extra $4 billion annually for many years.

Then there's the technophobia that afflicts a vast majority of American teachers. Expensive staff development efforts and major changes in preservice teacher education would be required to overcome this barrier.

And that's not even to mention the issue of equity, in an era still plagued by immense financial disparities among school districts. Clearly, bake sales and car washes will not suffice to finance this restructuring effort.

The financial ramifications are sobering. But they are no more sobering than Eliot Levinson's warning in this issue about the difficulty of implementing radical organizational and structural innovation of any kind in our education system.

Just suppose for a moment, though, that the schools could surmount these hurdles. We'd have active, learner-centered, lifelong, interdisciplinary learning. We'd have genuine equality of educational opportunity. We'd have real individualization of instruction. We'd have ways of dealing effectively with adult illiterates and with dropouts in search of a second chance. We'd have new and powerful solutions to a whole raft of problems that now bedevil us.

We live in a wired nation, as Shelly Weinstein and Susanne Roschwalb point out in this issue, so the technology is at hand. But our schools are still unplugged. It's time to take steps to make sure that the dark doesn't catch us. – PBG

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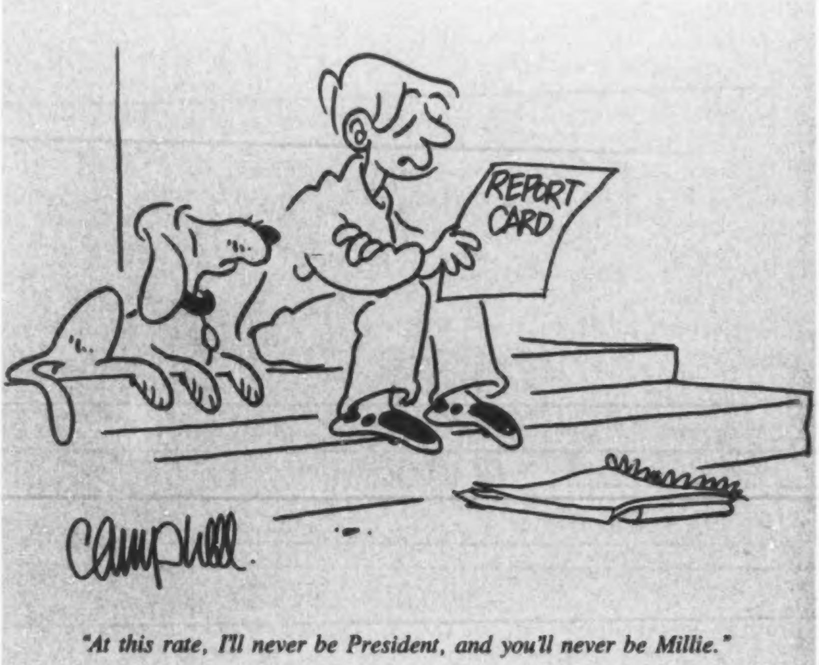
The Nation's Report Card Goes Home:
Good News and Bad About Trends in Achievement

When data from different sources conflict, the truth is often to be found somewhere in the middle, Messrs. Linn and Dunbar point out. Some such truths are evident from the surveys of achievement trends discussed here.

BY ROBERT L. LINN AND
STEPHEN B. DUNBAR



"At this rate, I'll never be President, and you'll never be Millie."

TEST RESULTS have long been used to judge educational achievement in the U.S. Public interest in test scores appears to be highest during periods when the public is actively seeking education reforms.[1] Not only are test results used as indicators that reform is needed, but they have also come to be viewed as a major mechanism of reform. Thus it should not be surprising that current interest in test scores is at an all-time high.

Each fall headlines report whether average scores on the American College Testing (ACT) Program's college entrance test and on the College Board's Scholastic Aptitude Test (SAT) have gone up or down for the nation, the state, and the local district. The press also calls attention to differences among the scores of blacks, Hispanics, and whites and to any change in the size of these gaps. The periodic release of results from the National Assessment of Educational Progress (NAEP), now known as the "Nation's Report Card," attracts similar attention. These national reports are supplemented by reports of the results of state- and district-level testing programs and by occasional reports of international assessments.

All in all, there appears to be an abundance of data from which to judge educational achievement. However, the interpretation of the results is quite variable, sometimes apparently contradictory, and frequently subject to controversy. Within the past year or two citizens of most states were apt to read reports indicating that students in their state or district continued to score above the national average and had scored better than their counterparts in the previous year. Those same citizens were also likely to come across reports indicating that scores on the ACT and on the SAT exhibited almost no change, an outcome that U.S. Secretary of Education Lauro Cavazos called "disheartening."

From the NAEP, the public would have heard both good news and bad. The details of the NAEP reports vary some-

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what by the content area of the assessment and by the age of the students, but, by way of overall summary, substantial gains in achievement were recorded by black and Hispanic students during the 1980s, while the achievement of white students changed relatively little. The absolute level of achievement, especially when put in the context of an international comparison released in January 1989, leaves much to be desired.

Some of the apparent discrepancies in messages being sent by test results can be reconciled by taking into account differences in who takes the tests (e.g., self-selected college-bound students or a cross section of high school or elementary school students), in the content of the tests, and in the conditions under which the tests are administered. For example, a substantial part of the highly publicized decline in SAT scores that occurred during the late 1960s and throughout the 1970s can be explained by an expansion of the pool of high school students who were applying to college and taking the test during this period. This is evident from the display in Figure 1 of means for the SAT and for the Preliminary Scholastic Aptitude Test (PSAT).[2] The PSAT results are based on the national norming studies that were conducted in 1960, 1966, 1974, and 1983 and thus are results for comparably defined groups of students. The SAT results, on the other hand, are based on the groups of students who happened to take the test in those four years and hence are not comparable. Because of the changing pool of test-takers, the SAT results clearly give a distorted picture of trends in student performance for the nation as a whole.

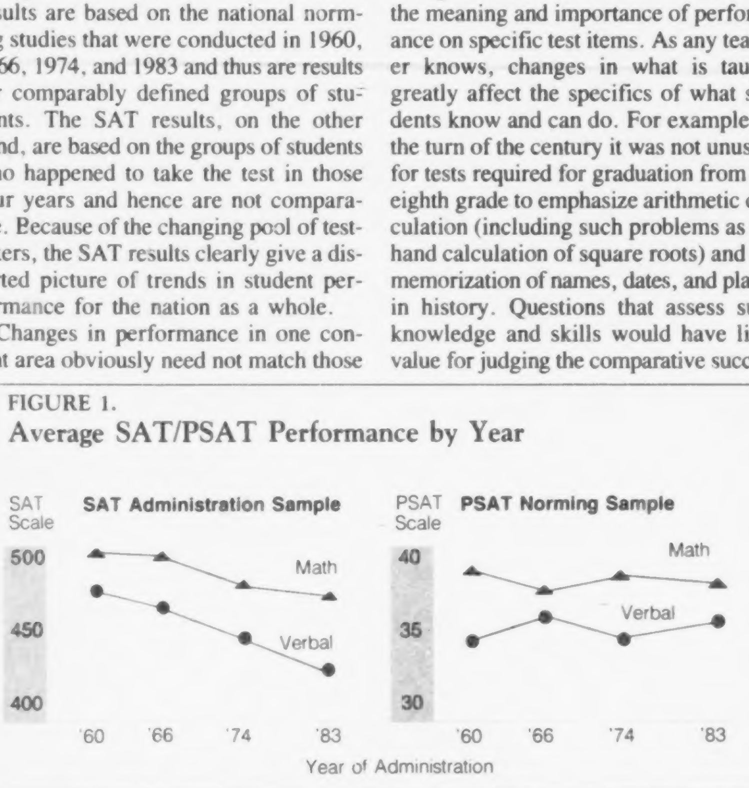
Changes in performance in one content area obviously need not match those for another. A gain in math or science achievement, for example, might occur during the same period in which there was a decline in achievement in civics or history. Indeed, it is often suggested that high-stakes testing in limited content areas may lead to an overemphasis on those areas at the expense of content areas not covered by the high-stakes tests.[3]

The average achievement of blacks and of Hispanic students is substantially higher now than a decade ago.

More subtle – and more difficult to explain to the general public – are changes within a content area that affect the meaning and importance of performance on specific test items. As any teacher knows, changes in what is taught greatly affect the specifics of what students know and can do. For example, at the turn of the century it was not unusual for tests required for graduation from the eighth grade to emphasize arithmetic calculation (including such problems as the hand calculation of square roots) and the memorization of names, dates, and places in history. Questions that assess such knowledge and skills would have little value for judging the comparative success of students who have studied a history curriculum that is issues-oriented and a mathematics curriculum that emphasizes conceptual understanding and problem solving and that makes heavy use of calculators.

FIGURE 1.

Average SAT/PSAT Performance by Year



Differences in the purposes of testing and the conditions of testing can also influence results. The NAEP does not report scores for individual students, schools, or even school districts. Indeed, obtaining state-level results from the NAEP became possible only recently.[4]

These circumstances are quite different from the circumstances surrounding typical administrations of achievement tests by states or districts. In such testing programs, not only are individual student scores reported, but, in the case of high-stakes testing, schools and individual teachers are also held accountable for the results. Students' motivation to do well when the scores are sent home and teachers' motivation to teach to the content of the test when they are being evaluated in terms of their students' scores are quite different from the conditions that apply during an administration of the NAEP.

Differences in test security can also partly explain why state and district reports of test results have generally painted a much more positive picture of progress in educational achievement than is provided by the NAEP. There is good reason to believe that the more positive picture derives, in part, from such factors as the exclusion of some students from testing and students' familiarity with the specific content of the tests (since the same forms of the tests are used year after year).[5] There is also reason to believe that the testing conditions in the administration of the low-stakes NAEP may result in an overpessimistic view of student achievement.

After taking into account these differences in the populations of test-takers, in the content of the tests, and in the conditions of test administration, there still remains a mixture of good news and bad. As we will show below, there has been some progress in achievement, most clearly at the low end of the scale. Progress at the high end of the scale is more difficult to ascertain because the results are equivocal. Clearly, the good news is that the average achievement of blacks and of Hispanic students is substantially higher now than it was a decade ago. But the gap between the achievement of minority students and that of white students remains large.

NAEP RESULTS

Perhaps the best single source of information about trends in educational achievement is the National Assessment of Educational Progress. The NAEP avoids the problem of changing pools of test-takers, which plagues the SAT and the ACT, by assessing nationally representative samples of in-school 9-, 13-, and 17-year-olds. While the NAEP content is not designed to match any particular curriculum, it is based on a consensus that attempts to insure that it reflects "the thinking of a wide variety of individuals – state and district curriculum specialists, teachers, school administrators, researchers, parents, concerned citizens, officials, and business people."[6] The NAEP is administered under uniform conditions that protect the security of the tests. Finally, the NAEP includes assessments in several key content areas, including reading, writing, mathematics, science, civics, history, computer literacy, and geography.

Reading. Because of the central role of reading in all school subjects and in the development of an educated citizenry, reading is the most frequently assessed content area in the NAEP. Results are now available from the five assessments conducted between 1971 and 1988. Although the average 9-year-old and the average 17-year-old in 1988 had significantly higher reading performance than their counterparts in 1971, the overall increases were relatively small, and the performance of 13-year-olds has remained essentially unchanged since 1971. Furthermore, the gains that were achieved by 9-year-olds occurred between 1971 and 1980, and the average achievement levels in 1984 and 1988 were slightly lower than the level obtained in 1980.[7]

To go beyond this relatively sterile global summary of the results, it is necessary to see how the best and poorest readers in 1988 compare to their counterparts in earlier years. It is also essential to get a sense of what the scores mean in terms of what students can and cannot do. Finally, it is important to consider separately the performance of minority students, who have traditionally been poorly served by schooling and consequently have recorded lower average levels of achievement. We will go back only to 1975 for this discussion, because the 1971 assessment used a different way of breaking down the sample into racial and ethnic groups than was used in subsequent assessments.

> The good news is that by 1988 the percentage of black 17-year-olds scoring at 300 or above had increased from 8% to 26%.

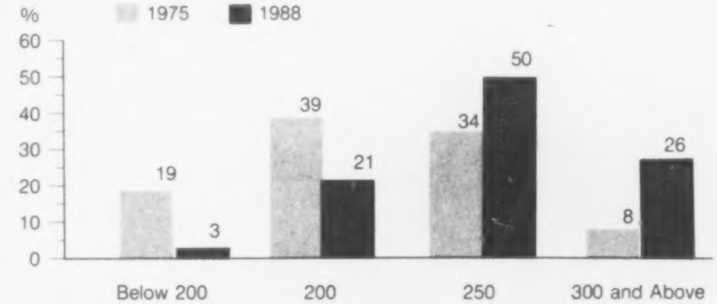
The NAEP reading scale is anchored with example questions and descriptions at five levels. We will focus on the middle three of these: scores of 200, 250, and 300. The NAEP refers to these levels as basic, intermediate, and adept, but such labels do not convey an overall sense of the reading proficiency of students scoring at these levels.

According to the standard NAEP descriptions,[8] students who score at the 200 level "have learned basic comprehension skills and strategies and so can locate and identify facts from simple informational paragraphs, stories, and news articles." They can also "combine ideas and make inferences from short, uncomplicated passages." Students who score at the 250 level "can search for, locate, and organize the information they find in relatively lengthy passages and can recognize paraphrases of what they have read. They can also make inferences and generalizations about main ideas and about an author's purpose." Students who score at the 300 level "can understand complicated literary and informational passages, including material about topics they study at school. They can also analyze and integrate less familiar material and provide reactions to and explanations of the text as a whole."

The anchor points of the NAEP scale are chosen in such a way that a student who scores at the 250 level is highly likely to answer correctly a question at the 250 level or below and is unlikely to answer correctly a question at the 300 level. So when it is said that 50% of the nation's 13-year-olds performed at the 250 level, it doesn't follow that none of the remaining 50% could answer any of the 250-level questions – only that they were unlikely to answer correctly any given question at that level.

It is startling to realize that 19% of 17-year-old black students had levels of reading achievement below 200 in 1975 and that only 8% of 17-year-old black students scored at the 300 level or above. The good news (presented in Figure 2) is that by 1988 the percentage of black 17-year-olds scoring below 200 had decreased from 19% to 3%, while the percentage scoring at 300 or above had increased from 8% to 26%.[9] These results, together with comparable im-

FIGURE 2.
Distribution of Black 17-Year-Olds In Four Reading-Proficiency Categories



provements for Hispanic 17-year-olds between 1975 and 1988, show that the whole distribution of reading proficiency scores of black and Hispanic 17-year-olds shifted to higher levels. That is, not only were average scores higher, but the levels achieved by the top and bottom readers within both of these minority groups increased in absolute terms and in comparison to the performance of their white peers.

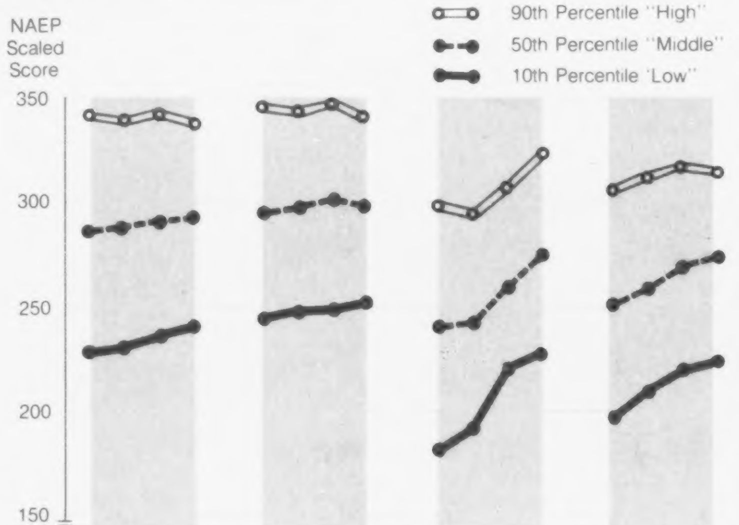
White students, on the other hand, made only small gains during this period. But white students constituted the great majority of students in the two highest categories (86% at or above 250 in 1975, rising to 89% in 1988). Since the comparable figures for black and Hispanic 17-year-olds in 1988 were 76% and 73% respectively, it is also clear that there is still a substantial gap between the reading proficiency of the average black or Hispanic 17-year-old and that of the average white 17-year-old. Insuring that all students progress and that the achievement gap between minority and majority students continues to close must be a national priority in the years to come.

Figure 3 provides a comprehensive picture of the progress of 17-year-olds over the last four assessments in terms that are more familiar outside the context of the NAEP and that can be more readily compared to other data sources.[10] The scores achieved by high-, middle-, and low-scoring students within each of the three major racial/ethnic groups and for the total group are plotted for each of the last four assessments. *High* is here defined as the 90th percentile for a given group and year: that is, the score below which 90% of the students in a given group are found. *Low* is defined as the 10th percentile for the group, and *middle* is defined as the group median.

There is a marked contrast between the trend lines for minorities and those for whites at all three levels. Black students – and to a lesser extent Hispanic students – have demonstrated unequivocal gains in reading comprehension, especially since the 1980 assessment. White students, on the other hand, have an achievement pattern much like that of the total sample: a slight downward trend among high-achieving students, coupled with only modest increases among middle- and low-achieving students. These and similar results at the other two age levels and in other content areas have led to statements in the NAEP reports that the gains have generally been at the more basic levels rather than on tasks requiring higher-order thinking. As we discuss below, the continued narrowing of the gap between minority and nonminority students – rather than the overall trends in the total sample – is bolstered by evidence from other sources of achievement data for the nation.

FIGURE 3.

NAEP Trends in Reading for 17-Year-Olds At Three Performance Levels



The trends in reading achievement for 9- and 13-year-olds are more mixed than those for 17-year-olds. Between 1975 and 1980, black, Hispanic, and white 9-year-olds at all achievement levels recorded gains. The performance achieved by the highest-scoring students within each of these groups was also higher in 1988 than in 1980. However, the performance achieved by average- and low-scoring 9-year-olds in 1988 remained relatively constant or in some cases (e.g., low-scoring white students and average-scoring black students and white students) declined slightly.

At age 13, the performance of white students remained essentially unchanged across the four assessments, while the performance of black and Hispanic students improved. The improvement for Hispanic students occurred at all achievement levels – but at less dramatic rates than those posted by 17-year-olds.

Mathematics and science. Before considering the specifics of trends in achievement in mathematics and science, it is worthwhile to place the issue in the context of national needs and international comparisons. The mathematical needs of the U.S. – indeed, of any advanced technological society – are eloquently and forcefully laid out in *Everybody Counts*, a recent report from the National Research Council. As that report makes clear, mathematics "is the key to opportunity and careers."[11] The importance of mathematics, science, and technology and the need to restructure U.S. precollege education in these areas are also discussed in *Science for All Americans*, a report from Project 2061 of the American Association for the Advancement of Science.[12]

The nation can no longer afford to turn children away from mathematics and science, and the nation can no longer live with the myth that these subjects require "special ability, which most students do not have."[13] One legacy of the myth is that U.S. citizens make up a shrinking fraction of the nation's graduate school enrollment in science and mathematics.

Seniors ranked 14th in advanced algebra, 12th in elementary function/calculus, and 12th in geometry.

Between 1970 and 1987, for example, there was a 50% decline in the number of doctorates in the mathematical sciences awarded to U.S. citizens; by 1987 the majority of new doctoral degrees in mathematical sciences awarded by U.S. universities went to citizens of foreign countries.[14]

In 1981-82 the Second International Mathematics Study (SIMS) obtained achievement test results and a good deal of information about content coverage for eighth-graders from 20 countries (in the case of Japan and Hong Kong, seventh-graders). Test results were also obtained for students from 15 countries who were in their last year of high school. Of the 20 countries participating at the eighth-grade level, U.S. students ranked 10th in arithmetic, 12th in algebra, 16th in geometry, and 18th in measurement. Of the 15 countries participating in the assessment in the senior year of high school, the U.S. ranked 14th in advanced algebra, 12th in elementary function/calculus, and 12th in geometry. Even after taking into account differences in the percentage of students retained through the last year of high school, the level of achievement of U.S. 12th-graders compared unfavorably to that of students in such countries as Japan, Hong Kong, Sweden, Israel, Finland, New Zealand, and England and was similar to that achieved by students in Thailand and Hungary.[15]

Another international assessment involving fewer countries was conducted in mathematics and science in 1988. Samples of 13-year-olds from Ireland, Korea, Spain, the United Kingdom, four Canadian provinces (British Columbia, New Brunswick, Ontario, and Quebec), and the U.S. were assessed using math and science exercises from the 1988 NAEP. Since separate assessments were conducted in French and in English for three of the Canadian provinces, seven separate sets of test results were reported for Canada. Thus 12 populations of students were compared (five countries plus seven province/language groups). U.S. students ranked either last or next to last among these 12 groups on each of five types of problems in mathematics and next to last in each of three categories of science problems.[16]

International rankings are subject to many problems, including sampling, translation from one language to another, differences in retention policies, and differences in curriculum timing. All can cause difficulty in interpreting comparisons such as those just presented. Despite these limitations, the results for the U.S. aroused concern. The 1988 results are particularly sobering in that the exercises were all developed specifically for U.S. students as part of the NAEP. Thus the poor showing of U.S. students cannot be dismissed because the exercises were more in line with the curriculum of another country. In any event, these international results provide a larger context for considering trends in achievement in math and science.

As it does with the reading scale, the NAEP identifies levels of performance in mathematics, anchored at five points on the scale by verbal descriptors and exemplary questions. The three middle levels have been designated beginning skills and understanding (level 200), basic operations and beginning problem solving (level 250), and moderately complex procedures and reasoning (level 300).

> Students who perform at or above level 200 are developing a greater range and depth of basic mathematical skills; however, their use of these skills is still imperfect and relatively inflexible. It can be inferred that learners at this level would have difficulty with reasoning that requires more than simple numerical computation. . . . Students who perform at or above level 250 on the proficiency scale have developed a surface understanding of the four basic operations and are beginning to acquire more complex reasoning skills. . . . Students who perform at or above level 300 demonstrate sophisticated numerical reasoning and are beginning to draw from a wider range of mathematical skill areas, including algebra and geometry.[17]

As in reading, some students at level 200 will answer correctly some questions that exemplify level 250 skills, though they would be unlikely to do so. Conversely, some students at level 300 may answer incorrectly questions that exemplify level 250 skills, though they too would be unlikely to do so.

The only stable trends in the percentage of students at each age level who attain a given proficiency occurred at the 200 and 250 levels. The direction of change at these levels has been positive since the 1978 assessment. While achievement described in this manner has improved, the NAEP notes in *The Mathematics Report Card* (which was based on the 1986 NAEP results) that

STATE
WE MUST BE IN FOR A COLD WINTER. JUST LOOK AT HIS FUR COAT!
SCHWADRON

only about 21% of the 9-year-olds achieved the level of basic operations and beginning problem solving (level 250), that only about 16% of the 13-year-olds reached the level of moderately complex procedures and reasoning (level 300), and that 6.4% of the 17-year-olds were proficient at skills that were described as "multi-step problem solving and algebra" (level 350). This last finding, coupled with the lack of any upward trend in high-level achievement, prompted much concern in the report of the 1986 assessment over the lack of progress in complex mathematical reasoning.

NAEP data can be used to trace overall trends in mathematics achievement from 1973 through 1986. In general, these data show only minor changes over the 13-year period. For example, the performance of 9- and 13-year-olds rose by a modest (albeit statistically significant) amount. In contrast, the scores of 17-year-olds have shown a net decline since 1973, although improvements since 1982 appear to be stable. As was true for reading, however, the most dramatic changes in the NAEP mathematics findings are the consistent gains made by blacks during the past three assessments. Since 1978 black students have outdistanced their peers in other racial/ethnic groups in the degree of improvement on the NAEP mathematics tests.

The average achievement in the NAEP science assessment increased at all three age levels between 1982 and 1986.[18] But that increase came after a relatively steady decline among 17-year-olds across the four assessments that were conducted between 1969 and 1982, and the subsequent increase for this age group has not been large enough to make up for the earlier decline. The performance of 17-year-olds in 1986 returned to where it had been in 1977 but remained below the level achieved by 17-year-olds in 1969 and in 1973. For 9- and 13-year-olds, the trend line for average achievement, while showing some slight ups and downs between 1970 and 1986, has been nearly flat.

At all three age levels there was a narrowing of the gap between the average science achievement of white students and that of black students – though the relative gains were less dramatic than those posted in reading by black 17-year-olds. The gap in average achievement between Hispanic and white students also narrowed slightly between 1977 and 1986 at ages 9 and 13, but not at age 17. Despite such gains, there remains much to be done at national, state, and local levels to eliminate the still-substantial group differences in achievement for minority students in both science and mathematics.

ADDITIONAL DATA

Besides the NAEP and the college admissions testing programs, data on trends in achievement are available from nationally standardized achievement tests and from the records kept by various statewide testing programs. Perhaps the most complete historical data on educational achievement, analyzed in a recent report from the Congressional Budget Office,[19] come from the Iowa Testing Programs in the form of trend lines for both the nation and the state of Iowa. A renorming of the Iowa Tests of Basic Skills (ITBS) during the 1987-88 school year permits us to examine trends in a nationally representative sample tested under standardized conditions during roughly the period of time covered by the NAEP reading and mathematics assessments.

The trend lines in Figure 4 show a somewhat different picture of achievement in reading and mathematics than was apparent with the NAEP. The performance of a nationally representative sample of third-graders used to standardize the ITBS has shown steady improvement since 1971 and, in contrast with the NAEP, has shown gains at even the highest achievement levels. Although the well-publicized decline in achievement test scores continued well into the Seventies for the seventh-graders, the ITBS data indicate the decline to have ended for seventh-graders by 1978. In reading and mathematics, the rise begun in 1978 continued into the most recent renorming of the ITBS. Indeed, national achievement measured by the ITBS now exceeds the highest point registered before the score decline of the 1960s. As in the NAEP, the more dramatic gains are observed among the lower-achieving students; however, increases at the upper ends of the score distributions are noteworthy in their consistency across all content areas.

The performance of minorities has also shown marked improvement since the 1977-78 standardization of the ITBS. By the time of the 1984-85 standardization, for example, black students in grade 5 had made up about 30% of the gap between their achievement and that of their white peers in the verbal skills measured by the ITBS (vocabulary, reading, language usage, spelling, and so on). However, no consistent narrowing of the achievement gap was registered in quantitative skills (math concepts, problem solving, and computation).

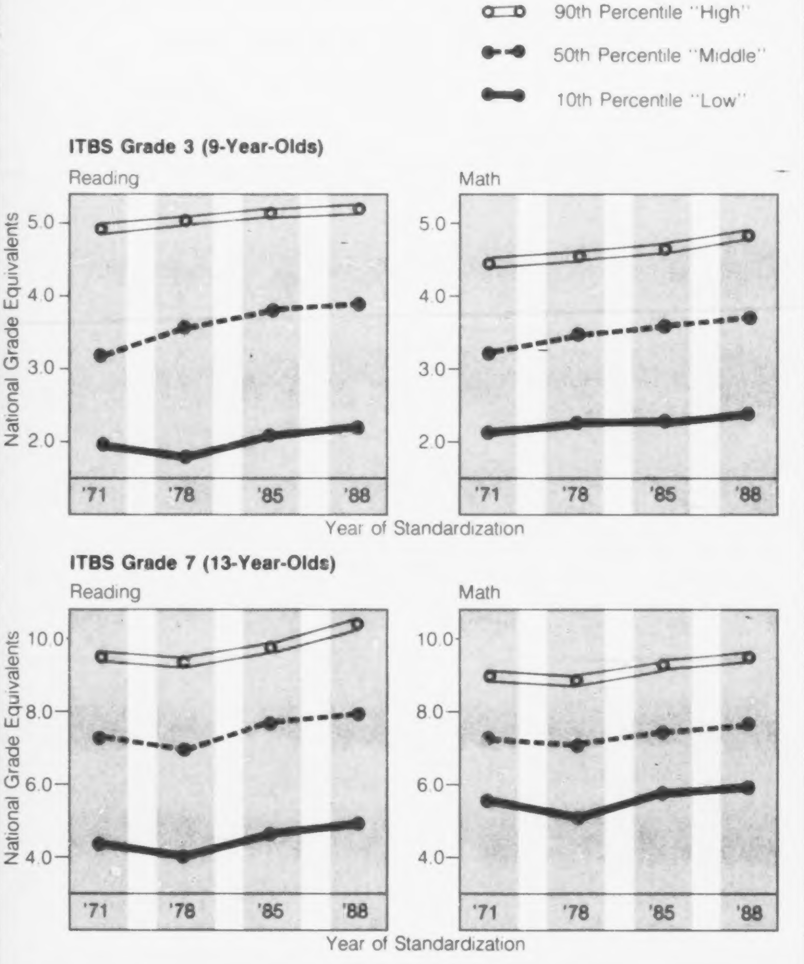
A recent University of Iowa study sheds additional light on the NAEP findings that progress in higher-order skills has been limited. The Iowa study examined the performance of comparable samples of 9-, 13-, and 17-year-olds on test questions in a given subject that were classified as measuring either higher- or lower-order skills.[20] Between 1979 and 1985, performance increases were found on both types of questions. However, contrary to the interpretations of the NAEP, the increases were slightly larger for the complex, higher-order skills. The authors of this study argued that there was little empirical evidence that increases in achievement during the period were limited to relatively mechanical tasks.

WHEN DATA from different sources conflict, the truth is often to be found somewhere in the middle. Some such truths are evident from the surveys of achievement trends discussed above. The gains among low achievers and minorities, in particular, are clear and consistent for all sources of data. What trend data say about the performance of students in, say, the top 10% of their classes is less clear, as are the correct inferences for policy making that can be drawn from any of these apparent trends. Other writers have urged that the education community not presume that a given reform effort will have a desired effect on achievement when the causes of achievement trends are multifarious.[21]

We urge similar caution. But we also suggest that the most recent round of report cards sends several messages to the public.

Reports of achievement trends can be very much influenced by the particular definition of achievement that a test represents and by the conditions under which the test is administered. These factors no doubt account for some of the discrepan-

FIGURE 4.
ITBS Trends at Three Performance Levels



cies detailed in this article. However, it is through a diversity of data on achievement trends that the most accurate, albeit more complex, portrait of educational achievement can be painted. To maintain this diversity is to broaden our understanding of the complexities of educational development and to increase the likelihood of detecting any unanticipated effects of reforms.

Despite the potential flaws of international surveys of achievement, the perspective they provide in mathematics and science suggests that efforts be made in these areas to stimulate and maintain the interests of young people at all levels of achievement and in all subgroups of the student population. What progress has been made in the sciences and mathematics must be carefully nurtured to see that the gains of the Eighties continue and even accelerate in the Nineties. We also have reason to nurture what have come to be labeled higher-order reasoning and problem-solving skills, in both the verbal and the quantitative domains. It is important that such skills be properly represented in the definition of achievement that is embodied in all forms of assessment, so that progress in this area, too, can be accurately measured.

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